The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 24. NO. 39. TULSA, OKLAHOMA, FEBRUARY 18, 1926

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More Activity Being Shown in Drilling

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Higher Crude Prices, as Usual, Result in More Field Operations. General Outlook Promising

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

Recent crude price increases are making themselves felt already in the general petroleum situation by the large number of new operations being started in the different fields, indicating an extensive drilling campaign which is being aided in the Mid-Continent area at least by good weather. In Oklahoma alone during the past week there were 135 new operations reported, while reports from other areas show there is a general belief basic conditions are sound and that good prices for crude will prevail this year.

The Panhandle area in Texas is receiving more attention at this time than for many months, the completion of two good wells there during the past 10 days emphasizing the potentialities of that section and giving promise of a real period of development when there are better facilities for handling the production. As soon as a real need is felt for more crude (and probably long before that time) the Panhandle will be the scene of considerable activity. That territory represents the only known big producing area at this time which has not been fully developed and which is capable of producing a large amount of petroleum.

Recent discoveries in the Gulf Coast and Southwest Texas sections will result in those areas being given much attention and it is expected considerable new production will be developed there. The completion of a good oil well in the Cole gas field in Southwest Texas was an important development of the past week while other completions in that territory indicate other possible new oil pools.

The increase in the posted prices of crude oil in the Eastern fields, announced last Saturday, had been expected. The price situation in California is being watched closely and it seems probable higher prices in California will doubtless result in another rise in the Mid-Continent and Eastern fields. Further increases in these areas at this time, without an increase in California, would do more harm than good, increasing as they would the differential existing between California products and those of the Mid-Continent and East in the Atlantic Seaboard markets.

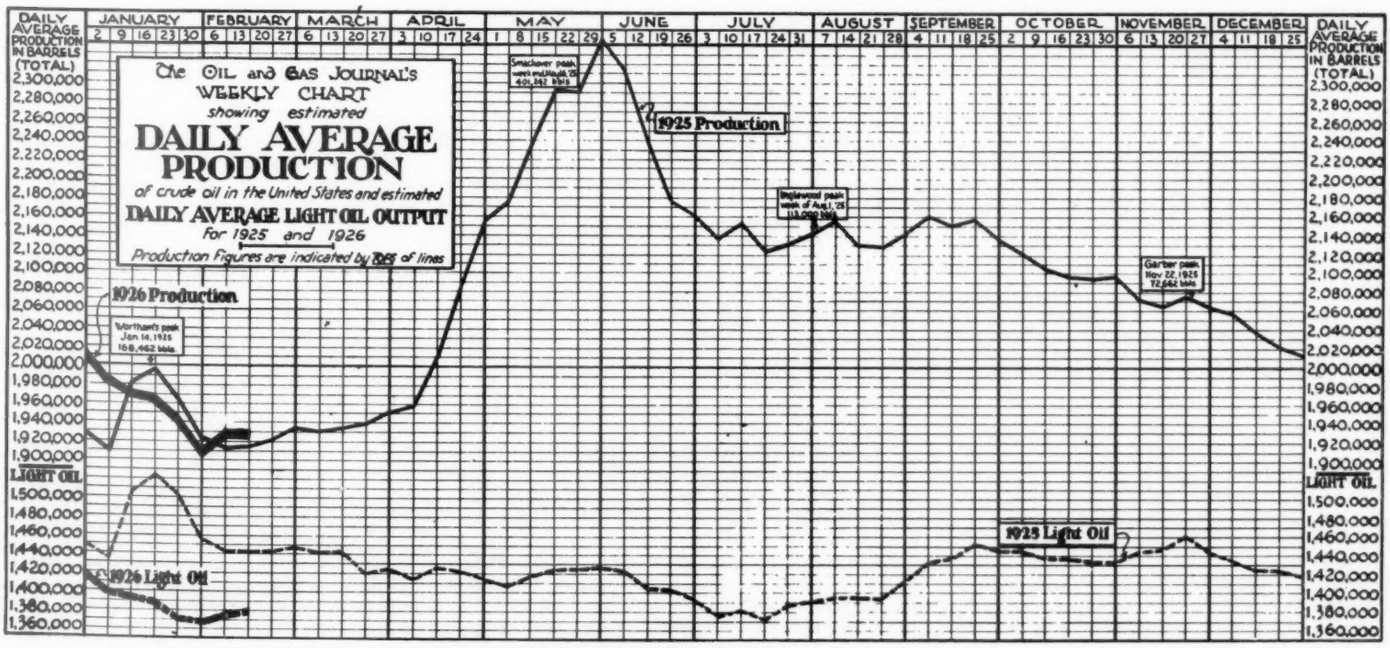
Conditions in the industry look especially promising. Such is not unusual at this period of the year, however, and in thinking of rapid increases in crude prices and drilling operations, the remark of a former Pennsylvania governor comes to mind: "Celerity should be contempered by cunctation."

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended February 13, and a comparison with the previous week follows:

	Feb. 13		Feb. 6	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	42,345	.....	43,265	.....
Burbank	44,840	.....	44,395	.....
Other Osage Fields	33,110	.....	33,765	.....
Cushing and Shamrock	22,540	.....	22,645	.....
Bristow and Eastern Bristow	32,090	.....	31,580	.....
Cromwell	20,010	.....	19,915	.....
Papoose	15,315	.....	14,620	.....
Garber	27,145	.....	21,885	.....
Blackwell-Braman	13,955	.....	14,140	.....
Davenport	19,830	.....	19,870	.....
Thomas	10,160	.....	13,595	.....
Northern Miscellaneous	102,915	.....	102,890	.....
Southern Fields	64,610	.....	63,420	.....
Total Oklahoma	448,865	.....	445,985	.....
North Louisiana	43,410	.....	44,280	.....
Arkansas—				
El Dorado and Calion	7,575	.....	7,315	.....
Smackover Light	19,180	.....	18,975	.....
Smackover Heavy	.....	140,175	.....	142,020
Stephens and Nevada	3,205	.....	3,335	.....
Total Arkansas	29,960	140,175	29,625	142,020
North Central Texas	160,875	.....	162,330	.....
Powell	32,996	.....	32,500	.....
Mexia, Currie, Richland, etc.	19,158	.....	17,450	.....
Wortham	12,320	.....	12,400	.....
Kansas	101,420	.....	100,650	.....
Total Mid-Continent Area	849,004	140,175	845,220	142,020
Gulf Coast	.....	101,766	.....	98,880
Southwest Texas	.....	37,905	.....	38,570
Eastern	98,475	.....	99,750	.....
Rocky Mountain Area	98,150	.....	97,560	.....
California—				
Santa Fe Springs	49,000	.....	49,500	.....
Long Beach	114,000	.....	113,500	.....
Huntington Beach	45,000	.....	45,000	.....
Torrance	5,000	25,000	5,000	25,500
Dominguez	22,000	.....	23,000	.....
Rosecrans	22,000	.....	22,000	.....
Inglewood	27,000	24,000	28,000	24,000
Remainder of State	52,000	221,000	49,000	225,000
Total California	336,000	270,000	335,000	274,500
Total United States	1,381,629	549,846	1,377,530	553,970
Grand Total	1,931,475		1,931,500	

→ **Total Decrease, 25 Bbls.; Light Oil Increase, 4,099 Bbls.** ←



WHAT AND WHERE TO BUY—PAGES 257-258-259

Refined Market Develops Softer Tone

Kerosene Alone Continues Strong in Oklahoma While All Other Products Are Inactive. Naturals Slip After a Brief Firm Spell

By Nell Williams

Although out of line with the upward trend of crude and tank wagon prices throughout the country, the Oklahoma (Group 3) refined market was admittedly soft the past week. Continuation of the comparative inactivity and dullness which followed the Mid-Continent crude advance two weeks ago, was particularly noticeable and prevented any firmness in refined markets.

The weakness was general except for kerosenes, which were available only from scattered sources in small quantities. Natural gasolines experienced a show of firmness for a few days as a result of a few large orders but when this buying ceased the downward trend continued.

Although considerably softer, quoted prices for refined products were not greatly changed during the week. Many refiners still maintained quotations put into effect immediately after the Mid-Continent crude advance and reported some sales at these figures even Monday and Tuesday.

However, it was impossible to deny that an abundance of material was available at greatly reduced prices. Especially was this true of U. S. Motor gasoline which was offered in some cases as much as a cent below some of the quoted prices. Practically the only important change in market prices was in kerosenes, which, if found, could be bought on Tuesday only at prices from a quarter to a half cent above the prevailing market of a week ago.

While lack of buying naturally would force prices on refined prices down, one of the most important factors in the present situation has been the fact that some marketers have fairly large quantities of gasoline on hand which they bought long in January when the market was at 9½ or 9¾ cents for the U. S. Motor grade.

To move this gasoline, these marketers are able to offer it continually at prices below many refinery quotations, thus adding to the weakness of the refiners' situation by enabling other buyers to fill their needs from these sources.

Jobbers Skeptical

On the other hand, jobbers apparently are skeptical of even prices of marketers and continue to buy only sparingly. They evidently are not anxious to purchase any more gasoline than they actually need, feeling that still lower prices are in prospect.

The refiners' situation is puzzling, according to market students. It is admitted even by buyers that refiners are not receiving the prices to which they are entitled in comparison with the present crude price structure.

With another possible crude advance staring the industry in the face, refiners are uncertain as to what course to follow. Buyers apparently are not worrying but if they do not purchase now in anticipation of a crude change it is not likely that they will buy refined products at higher quotations which naturally would prevail after a crude advance.

Considering last year's buying flurries and fluctuating prices, developments the latter part of 1925 and so far this year have led market students to the opinion that the general market conditions this year will be steadier, and as a result, better on the whole for the refiners.

This opinion is borne out by the fact that since last November the U. S. Motor gasoline market has maintained a fairly steady course with prices hovering between 9½ and 10½ cents, whereas during the same period of previous years these prices have fluctuated rapidly between 7½ and 13¼ cents.

The principal reason for the belief that prices this year will maintain comparative steadiness lies in the evident policy of all buyers, both export and domestic, the last six or seven months, of spreading purchases out as products are needed rather than buying large quantities and then dropping out of the market.

Gasoline and Naphtha

This policy was further emphasized in the purchase during the week of from 2,000,000 to 3,000,000 gallons of higher gravity gasolines by an export company from Oklahoma and North Texas. These export companies have been making such purchases steadily nearly every week since last fall and as a result, spot market prices of these gasolines were not run up only to drop rapidly as they did last year when large export purchases

(Continued on Page 231)

REFINED MARKET BAROMETER

Refined markets of the country were somewhat spotted the past week with the eastern districts strong, the Middle West and Mid-Continent weak, California unsettled and other areas little changed. The strength and activity of gasolines in the East was reflected in general tank wagon advances but this was in contrast to the Middle West and Mid-Continent where these products were considerably weaker. Kerosene was generally stronger and in some areas extremely scarce with record high prices. Tank wagon advances were almost general. Fuel oil and gas oil were unchanged with the former inactive and soft except in the East. Lubricating oil market conditions were localized, the only important changes being in Pennsylvania and California, the former district showing greater strength with higher prices and the latter additional weakness with general price reductions.

Mid-Continent—Refined markets in all areas generally weak except kerosenes. Gasoline prices lower with demand sluggish. Kerosene unobtainable in most sections and then only at record prices. Fuel oil and gas oil unchanged. Natural gasolines slip after show of firmness during the week.

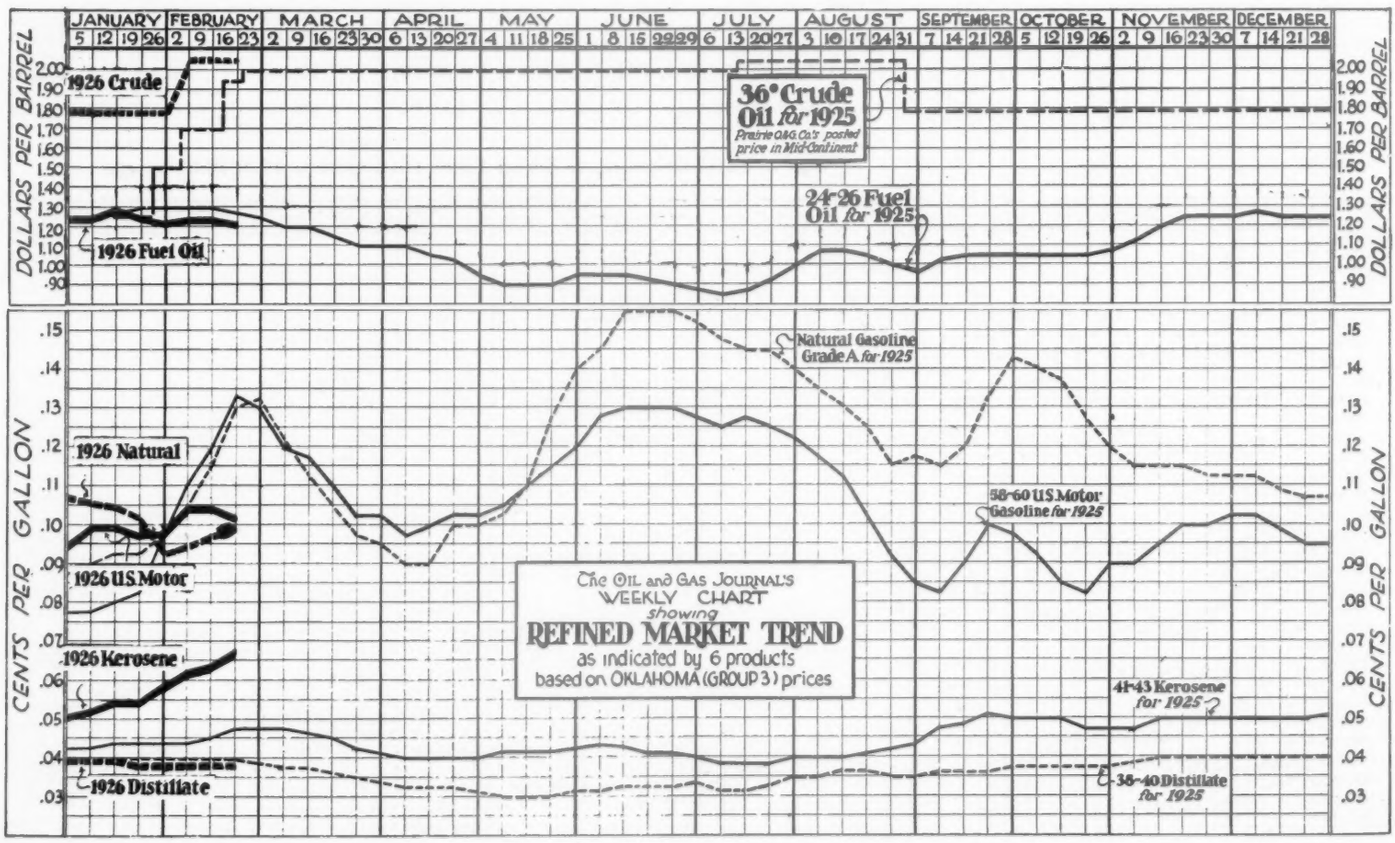
Atlantic Seaboard—Refined markets more active with gasoline and kerosene strength reflected in general tank wagon advances. Furnace oil and Diesel oil demand improves. Lubricants soft. Other products unchanged, with fuel oil firm.

Pennsylvania—Kerosene stronger with higher prices. Gasoline holding its own. Increased demand strengthens wax. Lubricating oils higher. Fuel oil unchanged.

Chicago—All products except kerosene weaker with trading dull. Prices lower. Kerosene prices higher but others down.

California—All grades of lubricating oils officially reduced from 1 to 1½ cents. Natural gasolines continue strong. Other products unchanged. Gasoline firm but consumption declines. Other products unchanged.

Gulf Coast—Unchanged.


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DOLLARS PER BARREL
1926 Crude
1926 Fuel Oil
36° Crude Oil for 1925
Prairie O&G. Co.'s posted price in Mid-Continent
24-26 Fuel Oil for 1925
CENTS PER GALLON
1926 Natural
1926 U.S. Motor
1926 Kerosene
1926 Distillate
Natural Gasoline Grade A for 1925
58-60 U.S. Motor Gasoline for 1925
41-43 Kerosene for 1925
38-40 Distillate for 1925
The Oil and Gas Journal's WEEKLY CHART showing REFINED MARKET TREND as indicated by 6 products based on OKLAHOMA (GROUP 3) prices

General Outlook in California for 1926

If Eastern Prices Warrant, Output of Crude and Refined Could Be Increased but Doubted Operators Would Adopt Such Policy

By L. P. Stockman

LOS ANGELES, Calif., Feb. 13.—General conditions in California have shown a very decided improvement during the past few weeks due to the rather unexpected decline in production and some of the pessimism which prevailed during the latter part of 1925 has been supplanted with an ever increasing amount of optimism.

We are starting off 1926 with an outlook somewhat similar to that prevailing during the early part of 1925 at which time California operators were anticipating smaller production and a big year from a financial standpoint. The present outlook, however, is much better in as much as there is no shallow field threatening to prevent recovery and hence the horizon is practically clear so far as any possible disturbing element is concerned from this standpoint. One must not forget, however, that several fields in the State offer excellent possibilities of showing increased production due to the opening up of deeper sands but since acreage in these areas is held in fairly large blocks, drilling will naturally be retarded.

The Midway-Sunset Field, which has been in the limelight particularly during the past year as a result of the completion of the Obispo Oil Company's deep zone well, contains considerable undeveloped acreage much of which is held by the Standard Oil Company as a result of the recent merger agreement with Pacific Oil. This land, however, can be eliminated from consideration for the present as it will be drilled up only when oil is needed. The area as a whole could be boosted up another 25,000 barrels a day by additional drilling if occasion demanded but operators will probably continue to reserve it for future requirements. There have been no further developments to indicate the potentiality of the Obispo zone as operators are apparently taking things slowly in the hope of avoiding all unnecessary drilling. It is expected, however, that some one will reach the desired depth and be in a position to make a test soon. In the meantime, to use an algebraic expression, it is an unknown quantity.

Possible Production

While considering future possible production it might not be amiss to call attention to Dominguez, Rosecrans, Inglewood, Ventura and Coyote Fields as these areas are generally regarded as reserves. Production in the Ventura Avenue Field could very easily be increased another 50,000 barrels daily if operators wished to undertake additional drilling but this is not likely to occur since only the General Petroleum, Shell and Associated Oil Companies have productive acreage and none is engaging in any unusual amount of drilling. Dominguez and Coyote are closely held and very little trouble is to be expected from either if additional production is not desired. The future of Rosecrans lies with the Barnsdall and Union Oil Companies and it is not believed either will engage in any unnecessary drilling. Production from the present horizon at Inglewood is growing smaller each day but the question of whether there is a deeper and more productive sand will remain another unsolved problem until some operator decides to drill and find out conclusively. It is generally believed the area offers excellent prospects but it is highly improbable a favorable test will be drilled within several months. The above fields should, however, be watched when operators decide to go ahead.

In summing up the production situation one finds that another 75,000 or 100,000 barrels of daily production could be built up by additional drilling without touching any of the curtailed production, aggregating at present approximate 61,000 barrels daily. Practically all of the wells closed down yield heavy oil and it is hardly likely that any great number of them will be returned to production before summer.

Present Output

Total crude output in the State at the present time is running around 610,000 barrels daily or approximately 10,000 barrels per day under the average for December. This decline is directly attributable to Inglewood and it is expected this field will continue to drop for a few months until it reaches bottom. Long Beach, on the other hand, can be expected to register a little increase due to work in the northwest extension, which may perhaps offset the loss at Inglewood for some little time. The possible effect of new fields on State production in the next six months can be discounted as very little drilling is being done at Seal Beach, which, by the way, is the only undeveloped producing area in the State, and while I anticipate the acquisition of another new producing district its effect will be negligible this year as it usually takes a California field a year to reach any appreciable amount. Any increase in production, therefore, must come from the development of deeper producing horizons. So much for production.

Now let us consider the prospects of a revision in the price schedule and its probable effect on production. Before forming an opinion, it might be advisable to go back and look over conditions prevalent during the early part of last year since the present outlook is somewhat comparable and note what transpired during the ensuing 12 months. With the advent of 1925 many of us pulled up a heavy upholstered chair, lit a nice big cigar and started figuring whether gasoline would go to 25 cents a gallon or 26 cents. When the Standard raised the price of crude oil 25 cents per barrel and increased gasoline 2 cents a gallon on February 4, we were sure it would go to 27 cents. We were rudely awakened, however, when Inglewood suddenly came to life in March and the record established by this field during the following five or six months is still too well known to require comment.

Inglewood's Influence

The field was originally opened up by the Standard in November, 1924, and while it looked for some time as though it would be a small one it turned out to be a troublesome factor due to the rapidity with which these shallow wells could be drilled into production. Inglewood was responsible for the several downward revisions in the 1925 price schedule to a larger extent than any other single area. Every effort was made to maintain prices but this was found impossible and two cuts were announced, one on September 22 and another on October 27. The field had thrown a total of 18,348,395 barrels of crude on the market during 1925 which had not been anticipated during the first two months and the effect this large output exerted on State production and the price offered for crude at the well is a matter of record.

It is in this regard that the present outlook is somewhat better than that prevailing during the early part of 1925. In the latter case we discounted Inglewood but in the present instance we have but to consider the possibility of developing additional production from deeper horizons. It is my personal opinion that the total State production will not drop very far below the 600,000-barrels a day mark in California within six months although it may be subject to fluctations but notwithstanding this rather heavy output I anticipate an upward revision in the various price schedules in the near future, if conditions in the Mid-Continent and along the Atlantic Seaboard continue to improve. Just how soon the ultimate increase in prices will materialize is problematical but it is quite evident some revision in prevailing schedules should be made soon, possibly within 30 days.

Stocks and Prices

Stocks of crude and refined oils held on the Pacific Coast increased 1,434,952 barrels during December and will probably continue to accumulate during the next few months although the addition to storage depends to some extent on the amount shipped East. In the past very few upward revisions have been made in price schedules to the time that stocks started to decline or at least the demand approached the supply. This would tend to indicate that present prices would remain stationary but one must not overlook the economic factors involved which today are even more pronounced than in times gone by. Development of the natural gas industry, continued improvement in cracking methods and the development of broader markets are a few of the many factors to be considered at present. Then, too, operators are grading the various kinds of oil and the price structure is based on the quality rather than quantity.

It is axiomatic of the petroleum industry that price fluctations bear a certain definite relationship to the supply of crude and the demand for refined products. California has at the present time a surplus of crude and refined oils above its normal requirements and while this condition will continue to exist for some time to come, Eastern and foreign markets should be able to take care of this excess to advantage. The prospect of getting a better price for California products is therefore dependent on the ability of Eastern markets to absorb this difference without disturbing present quotations at the various points along the Atlantic Seaboard. The recent decline in national daily production to below the 2,000,000-barrel mark looks quite promising and this together with the fact that crude and refined oil prices have improved east of the Rockies should permit additional shipments east and thus warrant a corresponding adjustment in California.

Light Oil Advance Expected

The prospect of an increase in California crude and refined oils therefore looks very good. The question naturally arises as to what effect this raise would have on the production of crude oil in California. Would it stimulate drilling to such an extent that another overproduction would result or would operators continue to pursue the same conservative policy as has been followed during the last few months? Increased drilling would naturally be expected but it is problematical whether any great amount of new production would be added as the larger companies would undoubtedly refrain from undertaking any unusual amount of work if by so doing they would weaken the price structure. In view of the above, there appears to be a good possibility of an increase in California light oil but no change in the price of heavy oil is warranted at the present time. If refinable crude was raised it would be possible to make additional shipments to the east coast and thus the present disparity existing between the supply and demand would be reduced.

Much depends upon the amount tankered out of the State and future prices for California oil will be governed to some extent by the movement handled. This should be a good criterion to follow but one must not lose sight of the fact that some companies are producing more gasoline and have more fuel oil on hand than they can dispose locally and for this reason will be obliged to ship for some time unless they desire to continue to store. With one or two exceptions California major companies at present are still rather reluctant to part with anything but fuel oil at prevailing prices but this is not surprising in view of the fact that light refining crude has fallen off somewhat during the past few months. There is plenty of heavy oil available but production of the lighter grades is showing a downward tendency.

Shipments Depend on Prices

One should not get the idea, however, that there is any impending shortage of oil for such is not the case. This brings up the subject uppermost in the minds of many regarding the possibility of

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Oil Leaders in Open Forum Discussion Be

Men of Petroleum Industry Bring Out High Points in Interchange of Opinions. Hughes to Be Heard at a Later Date

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 13.—When the first meeting of the Federal Oil Conservation Board public hearings was called to order today by its chairman, Hon. Hubert Work there was assembled in the auditorium of the Department of the Interior Building the most representative gathering of leaders in the petroleum industry that has ever been called together in this city.

Both the presiding officer and speakers made reference to the unique nature of this conference. Some of them suggested that they had experience in Congressional and other inquiries by legislative bodies before which they had been put upon the grill and made the target for hostile questioning while here they were given a free range of discussion of their problems with the helpful thought they might solve their own difficulties merely by an exchange of ideas.

It at once became evident that the Federal Oil Conservation Board was there to obtain information by means of an open forum in which the oil men were to be given free policy in "presenting their problems and in pointing the way for improved methods for conducting the great business of supplying the nation with the myriad products involved in the oil industry.

On the platform were the four cabinet officers who made up the personnel of the board. Besides Secretary Work, the chairman, there were Dwight F. Davis, Secretary of War, Curtis D. Wilbur, Secretary of the Navy and Herbert Hoover, Secretary of Commerce, all of them attentive listeners to the variety of views that were expressed.

It was a dignified assemblage opened by the chairman reading President Coolidge's letter, authorizing the board to conduct these hearings, followed by the Secretary's own remarks summing up the problem that lay before the industry, (published in The Oil and Gas Journal last week.

W. S. Farish, president of the American Petroleum Institute, spoke briefly expressing his gratification upon being present at such a gathering.

Amos L. Beaty, president of The Texas Co., spoke on the "Opportunity for State Legislation in Aid of Oil Conservation," (reported by wire in The Oil and Gas Journal last week).

W. C. Teagle, president of the Standard Oil Co. of New Jersey, spoke on "Fuel Oil and Its Influence on Conservation," (reported by wire in The Oil and Gas Journal last week).

Doherty Debate

Henry L. Doherty spoke on "The Petroleum Problem As I See It," (reported by wire in The Oil and Gas Journal last week).

Mr. Doherty stirred up more debate than any one of the speakers and later when the open forum was announced, E. W. Marland, president of the Marland Oil Co. of Ponca City, Okla., gave the first real color to the dignified proceeding by saying he felt that Mr. Doherty was "having fun" with them.

Alexander Deussen, also of the Marland Oil Co., did not believe in Mr. Doherty's idea that oil, once discovered, must be produced and once produced, must be sold and that there was no element to deter that proceeding. He believed the price of oil is a powerful deterrent. He also crossed swords with Mr. Doherty on his statement that there are no longer any really wildcat wells, and that the location of oil is made certain by the work of petroleum geologist.

"There is as much hazard in drilling new territory today as there was 10 years ago," declared Mr. Deussen. "The science of geology has not advanced so you can know where to find oil," he added.

The afternoon session was presided over by President Farish of the American Petroleum Institute. C. F. Kettering presented as the foremost man of the country in the development of automotive power, spoke of the possibilities for additional mileage from a gallon of gasoline. (Reported by wire in The Oil and Gas Journal last week.)

George S. Davison, president of the Gulf Refining Co. of Pittsburgh, Pa., presented a highly interesting talk about changes that are possible in the refining industry.

James O. Lewis of Tulsa, Okla., discussed the rejuvenating of depleted oil fields and his suggestions for obtaining production in fields long abandoned awakened keen interest. He was sure that by proper methods now available as much oil could be obtained by rejuvenating methods as had been produced.

"Do you mean that 8,000,000,000 bbls. of oil can be obtained from these methods?" asked Mr. Doherty when the open forum invited questions, "That is what has been produced."

Mr. Lewis was satisfied that that result could be accomplished and with the present knowledge of the best methods for making old production start new production. He suggested that improved methods might add materially to that prediction.

Discussion on Lewis Paper

Mr. Pew: Mr. Lewis, is not the rate of the recovery of this additional oil and also the time at which it would be recovered largely dependent on the cost of the production, and the amount that can be received for the product that will justify it?

Mr. Lewis: Yes, it very largely depends upon that. Now you go into a pool and with a moderate amount of machinery you can get forced production three or four or five times. But if you wish to spend the money you can put in much larger machinery and increase the rate of recovery much higher. And you finally come to the balance between increased recovery, the increased rate and the amount of investment that gives you a productive return.

Mr. Pew: Well, that productive return is dependent altogether on the competition of other oils that are produced more cheaply?

Mr. Lewis: Yes, very largely.

Earl Oliver: Just as a matter of information. The 20,000 wells that you estimated forcing now being applied in this manner on, have you any idea as to the amount of production being received from those 20,000 wells?

Mr. Lewis: I should judge it would be not over 15,000, and probably not over 10,000 bbls. a day.

Mr. Oliver: I think you stated in your comparison the application of gas and air, that gas tended to absorb, become dissolved in the oil, and that it had somewhat the same influence as boring holes in a piston head. As the gas becomes dissolved to the limit that it will dissolve in the oil under that pressure, does it then continue to have that same influence, or will it have the same influence in its driving power as would air?

Mr. Lewis: The laboratory experiments I conducted at about the pressure of 150 pounds showed it took over four times as much gas as air to expel the same amount of oil. In our field experience we have not had quantitative results that could be compared one with the other in a quantitative way.

Rate of Recovery

Mark Requa: I assume from what you have said that perhaps a production of 1 bbl., or at the utmost 2 bbls a wel per day, would be all that you can expect to get by your method?

Mr. Lewis: No, I did not say that. Somebody asked me how much these 20,000 wells were producing. And my estimate was that they were averaging possibly three-quarters of a barrel a day at the present time. Now there has been more than that, because in a great many of the 20,000 wells the pressure process was applied more than 10 years ago, and they have since declined to a very small production.

Mr. Requa: Have you any estimates as to what the probable production of a well might be expected to be?

Mr. Lewis: That depends so much upon the pressure and the way it was applied. In these old properties in Oklahoma where the present production is one-quarter or one-third to one-half a barrel it can probably be raised readily to two or three barrels a day. But when you apply pressure to a new pool you have records where the production has been raise to 50 or 100 or even several hundred barrels a day.

Mr. Requa: What was the usual size of those wells when you started in to apply the pressure?

Mr. Lewis: In the Lenapah Pool the wells were up to about 700 bbls. a day. I should say the average was between 100 to 200 bbls. initially. We could raise the production by putting in more machinery.

Mr. Pew: But in the Lenapah Pool those wells, when you began to apply that pressure, had got down to about one-half a barrel?

Mr. Lewis: Averaged about a third of a barrel.

Lewis Answers Doherty

Mr. Doherty: Mr. Lewis, I don't think you wanted to give the impression that at the same pressure you were recovering more oil with the use of air than you were with the use of gas, but that you would have to pump in more gas than you did air. But my contention is that you will get no more oil by going back and re-establishing pressure on a field than you would have got by simply maintaining that pressure, and my contention further is that you will not get as much. The thing to do is to never let the pressure go off.

Mr. Lewis: I do not believe there is enough horsepower, to put it that way, in the field when you get to it to get out all that oil, no matter what you may do at the wells themselves. I simply do not think there is enough energy there to get it all out.

Alexander Deussen: Mr. Chairman. I would like to ask Mr. Doherty as to whether leaving the oil in the ground in this manner for subsequent recovery is not a subject of conservation?

Three Years of Achievement

The outstanding achievement of The Oil and Gas Journal in 1924 was the compilation and publication of "The Oil Industry's Answer."

In 1925 The Oil and Gas Journal's segregation of light and heavy oil production was recognized as the most influential factor in stabilizing the industry through the peak of production for all time.

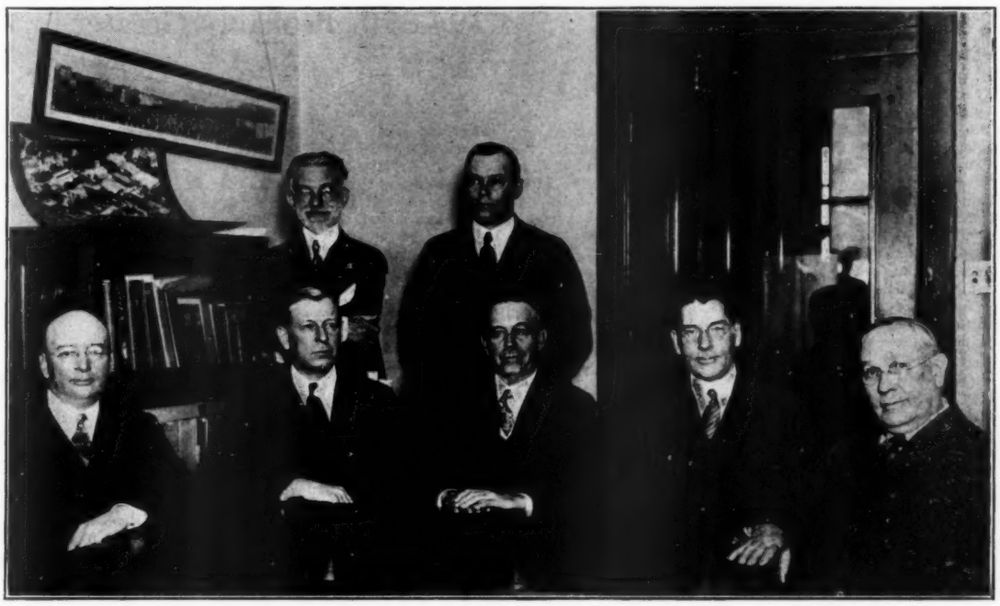
The flood from Smackover raised the total daily production for the United States from 1,911,730 bbls. for the weeking ending January 3, 1925, to 2,347,984 bbls. for the week ending May 31, an increase in only five months of 436,254 bbls., the greatest in history. Yet, thanks to the differentiation between light and heavy production and The Oil and Gas Journal's emphasizing it, there was no downward changes in prices despite record production, and on July 10, the Prairie Oil & Gas Co., recognizing the importance of gravity, revised its entire price schedule, making 17 grades instead of 6, with one degree between each grade and the new schedule was an actual increase over the old.

Instead of being stampeded by the unparalleled production the industry kept its head. The Oil and Gas Journal's segregation of light and heavy oil was followed two months after by the Government's statisticians and was finally crystallized in the 17 new grades of the Prairie's posted prices.

In 1926, The Oil and Gas Journal has already contributed an outstanding service to the industry in its unequalled reports of the hearings before the Federal Oil Conservation Board. By wire and in the fullest detail the proceedings of the most important conference on petroleum ever held have been placed before the industry in the issues of last week and this week, reports unobtainable through the daily press and to be had in printed form while they were still news only in the columns of The Oil and Gas Journal.

Before Federal Oil Conservation Board

OIL MEN MEET WITH GOVERNMENT OFFICIALS



—Photo by Underwood & Underwood

Among those attending the public hearings of the Federal Oil Conservation Board in Washington last week were: Sitting, left to right—W. S. Farish, president of the Humble Oil & Refining Co. and of the American Petroleum Institute; Dwight F. Davis, Secretary of War; Hubert Work, Secretary of the Interior; Curtis D. Wilbur, Secretary of the Navy; and George S. Davison, president of the Gulf Refining Co. Standing, left to right—Henry L. Doherty, president of Cities Service Co., and Walter C. Teagle, president Standard Oil Co. of New Jersey.

Mr. Doherty: Mr. Lewis gives figures and views on the recovery of oil in these pools that I wish I could share, but I have no such hopes of getting anything like such recovery in any of our pools that have been grounded out. My contention is that the only way in which you can control your edge water and your rise in your structure is by maintenance of your gas pressure. And this thing of letting a field become flooded with water, or something of that sort—you never can go back and recover as much as by simply maintaining your pressure and holding your oil in the original way.

I have been watching the work of Doctor Nutting with interest, but I do not think we have to draw on our imagination nearly as much in assuming that we can get out of a virgin pool practically every barrel of oil that is there, if it is to be assumed that we are going to recover any such amount of oil as Mr. Lewis thinks from these abandoned pools. I hope he is right. But I do not see any reason for believing any such thing as that, and I think he will admit that it is partially a matter of expecting improved engineering practices that as yet have no basis to warrant them.

California Record

Mr. Pratt: I had the advantage of seeing some company records in California two weeks ago which involved the results of pressure restoration in existing wells in that State, and I recall the record of a well to which pressure was applied about eight months ago. At the time the pressure restoration was inaugurated the well had ceased flowing. The original pressure had fallen so low the well would no longer flow but by heading, it was making 114 bbls. of oil per day. At the time I visited the well it was making over 700 bbls. a day. In the meantime, and immediately after pressure restoration was put on, it produced 1,000 bbls. per day. Now, that was a well which at the time the pressure was restored was fast approaching exhaustion.

When I asked them why they had not applied pressure restoration earlier, they replied that their mechanical equipment did not permit them economically to apply pressure of 1,200 pounds or 1,400 pounds per square inch in order to force the gas into the reservoir under the original pressure conditions. But after the pressure had fallen to something like 500 pounds per square inch, then it was possible economically to restore the pressure and to get increased production.

Marland-Doherty Tilt

Mr. Marland: Gentlemen, I am so used to having Mr. Doherty make fun of us oil men that I am not quite sure whether he was not doing it this morning in some of the things he said. I can hardly think he was quite serious in some of his suggestions. He seemed to me to suggest then, and does now, that 99 men in 100 men pools should have the right to compel one man to refrain from producing his oil even though he might want to produce it, even though he might have to produce it to get the money to live on, because the price was not high enough to satisfy the other 99. And he suggested to us that he found something in the Constitution of the United States that would permit the Federal Government to enact laws to control the situation. Gentlemen, I think he was making fun of us, I mean, that he was making fun of us on one occasion when he told us where he found any such provision in the Constitution. At a meeting of the Directors of the American Petroleum Institute, and I think it was in a meeting of the full board, he told us that he had instructed his lawyers to see if they could not find in the Constitution of the United States some provision that would permit the Federal Government to enforce this slow drilling plan and increase prices. Then he said that his lawyers had reported back to him that they could find no such provision in the Constitution of the United States, but that he was not satisfied with that opinion, and that he then got a copy of the Constitution and read it himself; and that he sent out for a copy of the World Almanac, and that he found a copy of the Constitution in that World Almanac, and that he devoted an hour or two to its study, and that then he found therein these things that his eminent lawyers could not find for him.

Gentlemen, I think he was making fun of us when he said that. And I am just wondering whether he was not making fun of us here this morning in some of the scientific theories he was propounding and whether he did not get that also out of the World Almanac.

Mr. Doherty (interposing): Mr. Chairman, I think Mr. Marland is dealing in a little sarcasm, but I would say that I was making a serious suggestion here.

Mr. Marland: I do not subscribe to Mr. Doherty's theory that you should drill but one well in 10 acres if you want to do the best by the public and conserve oil. I really believe you can do better by drilling 10 wells in one acre and running all of them at the same time. It might cost the industry more but you will conserve oil.

Mr. Doherty: I am not seeking to make fun of the petroleum industry and never have.

Mr. Marland makes fun of my study of the Constitution. Do not forget that if an amendment came up tomorrow we would have to vote on it, and if we have not intelligence enough, if we have not knowledge enough to frame a Constitution we certainly have not intelligence enough to interpret it. I still believe the Federal Government has the power to enact laws to control this matter—because the several States under their laws make it possible to waste oil, and the Federal Government cannot carry out its pledge to the other States except by conserving oil.

The evening session Wednesday was devoted to a showing of the motion picture entitled, "The Story of Gasoline."

E. W. Marland, president of the Marland Oil Co., spoke during the evening and was perhaps the most pronounced in scouting the idea that there is any imminent danger of an exhaustion of petroleum. He was convinced there is a sufficient supply of oil to meet the demand of internal combustion fuel and lubribation for centuries to come, probably as long as our civilization and its necessities for petroleum shall exist."

R. H. Smith of the Oklahoma Oil Co. of Pennsylvania was sorry to see the oil industry so frightened at the mention of conservation. He thought the industry needed stabilizing.

It is seldom that a hearing of this kind is able to keep together its membership from day to day but there was no abatement in the interest shown by this body of busy oil company executives.

Thursday morning's session was opened by Earl Oliver of Ponca City, Okla., who stressed the waste of haphazard and frenzied drilling.

J. Edgar Pew, vice president of the Sun Oil Co., was convinced the future would find a way to take care of oil needs.

Hoover Questions Teagle

Secretary Hoover, presiding, addressing Mr. Teagle: Suppose gasoline today is 20 cents a gallon. Would 30 cents a gallon induce the conversion of fuel oil into gasoline to the maximum cracking possibilities, or what figure above 20 cents would do it?

Mr. Teagle: It all depends upon the price of crude, it depends upon the amount of production of crude. Gasoline can be produced from crude say, for example, Mid-Continent crude, and sold at a price today in the Mid-Continent Field of about 11 cents in tank car lots, and if fuel oil is selling for $1.25 or $1.26 a barrel, or 3 cents a gallon, then you will have a spread between the price of gasoline and the price of fuel oil of 8 cents a gallon. Now if you can take that same fuel oil at a cost to you of 3 cents, and put it through cracking equipment and make gasoline at less than 11 cents, the advantage, of course, will be to make the gasoline from the fuel oil at the lower price.

Now I think that there is one point that I probably failed to make plain in my remarks of yesterday, and that is that there will be from the cracking operation a certain amount of fuel oil residue left which will have to go on the market. For instance, take last year, if the demand for gasoline had been sufficiently high, if the requirement of gasoline had been, say 70,000,000 bbls. more than they were, the price had been sufficiently high to justify the investment in additional cracking facilities, we could by the commercial yield that we were obtaining last year have supplied from the same quantity of crude the 70,000,000 bbls. of additional gasoline, but we would then have used up somewhere in the neighborhood of 100,000,000 bbls. of fuel oil, so we would have had left instead of about 400,000,000 bbls. of fuel oil, 300,000,000 bbls. of fuel oil, and we would have taken the surplus of fuel oil out of competition with coal.

Uses of Fuel Oil

There are certain uses where the price of fuel oil is absolutely non-competitive with coal. A Diesel motor ship can afford to pay on today's basis of coal prices, 17 cents a gallon for fuel oil because it operates on an efficiency so much greater than the efficiency of the most up-to-date marine boiler plants. So that my theory is that it is progressive. The price will regulate the question of how much oil should be produced, through the operation of supply and demand. If you will go on replacing products that are less valuable, for which there are substitutes, the price of crude will be based in the future on the value of the more essential products, instead of as in the past it has been largely the case of the value of one product, having to throw away, from an economic standpoint at least, the less valuable product in the crude.

Mr. Hoover: I was just wondering whether it was possible to give any estimate as to what increased price would bring that about? Now it seemed to me

(Continued on Page 234)

Big Sum Spent for Equipment in 1925

Cost of Drilling the Wells Completed Last Year Totaled $594,394,890. Probably Greater in 1926

By Andrew M. Rowley

Nearly $600,000,000 was expended in 1925 by oil men in drilling the 25,623 wells completed. When it is considered this vast sum represents only the cost of actual drilling operations and the equipment needed only for the completion of the wells, it is not hard to visualize why the petroleum industry has been referred to often as "the billion-dollar-a-year business." It is estimated that it cost $594,394,890 to complete the wells finished during 1925, without taking into consideration the great cost of other drilling operations not listed officially by The Oil and Gas Journal as wells completed in that year.

That sum does not include the money spent for the leases, royalties, rentals, pipe line connections, storage tanks, pumping equipment or other necessary adjuncts to commercial oil wells, but represents only the actual cost of drilling the wells, the casing, derricks and other equipment used in drilling the wells and bringing them to completion.

Aside from the cost of the labor involved, that sum is what was paid for equipment needed in the drilling of these 25,623 wells which were listed as completions. These figures compare with $476,328,320 expended in 1924 to complete 21,894 wells and $515,704,000 spent in 1923 to complete 24,438 wells.

With drilling operations throughout the United States showing a substantial increase during the past week or so, following the recent crude price increases, and indications that prices for crude oil this year will average even higher than during 1925, it is believed more wells will be drilled and completed during 1926 than in 1925, which showed a big increase over 1924, with a corresponding big increase in the amount of money which will be paid supply houses and equipment concerns for the necessary material with which to drill the wells.

Of the 25,623 wells completed last year 6,734, or more than one-fourth, were dry and oil men paid out $171,760,295 in completing these dry holes. The salvage from dry holes, consisting of casing in cable tool wells and other equipment, permitted those drilling these dusters to save approximately $26,763,310 of their original investment, leaving a net loss to those failing to procure commercial production of $144,996,985.

Few persons outside the oil industry realize the large sums expended yearly in a futile effort to find petroleum. They do not know, either, that this money is not added to the cost of producing the oil that is found, for losses sustained in drilling dry holes have no effect whatever on the cost of crude petroleum, those unfortunate enough to fail to procure commercial production being the sole losers. It is this condition, little appreciated by persons not familiar with the petroleum industry, which represents one of the hazards of the business and the extent of this one hazard can be realized easily when it is shown by official records that more than one-fourth of all the wells completed last year were dry and that these dry holes represented a net loss to the oil men drilling them of $144,996,985.

It is most interesting to note just what it cost to produce the initial output of all the oil wells completed last year, and how this cost varied in the different areas of the United States. The fields of Pennsylvania, New York, southeastern Ohio and West Virginia, representing the Eastern territory, easily took first place in the high cost of initial production, the average cost per barrel of initial production of the wells completed in 1925 being $979. The lowest cost was in Louisiana-Arkansas territory, the average per barrel of initial production in that area being but $24. The big gusher wells of the Smackover Field, responsible for most of the 1,309,722 bbls. of initial production recorded in that territory last year, also were responsible for the low cost per barrel of initial production.

In considering the cost of initial production, however, it must be kept in mind wells in the Smackover area declined rapidly and the big flush output of wells completed in that field dwindled soon to little or nothing. In the Eastern fields, the wells are of exceptionally long life and while the initial output there is small, the decline is also very little and these wells produce with little variation for a long period of years. The same holds true for many other fields, steady production over a long period being far better than a big flush output when the wells are completed and then a rapid decline in production.

With the tendency throughout the United States toward deeper drilling and all indications pointing to a substantial increase in field operations in all areas, it is believed more money will be spent by oil men for drilling equipment and other supplies needed for these operations in 1926 than during any previous year.

At this time there is no menacing new oil pool in sight, probably the best possibility being the Panhandle area of Texas. Development there will depend to a great extent upon the demand for crude and the facilities for handling the production when it is procured. That section needs pipe lines before any great intensive drilling campaign will be inaugurated. With consumption of petroleum and its products continuing to increase and the requirements of the refineries of the United States during this year estimated at more than 800,000,000 bbls., there is sure to be a big revival in field operations.

This increase has started already, as stated above. It will grow as the prices of crude are increased for drilling operations are guided almost entirely by the price of crude.

Area—	Wells Completed	Dry Holes	Total Cost Completions	Cost Dry Holes	Salvage on Dry Holes	Net Loss Dry Holes	Net Cost Completions	Initial Oil Product'n (Barrels)	Cost per Bbl.
Oklahoma	4,978	1,578	$171,741,000	$ 54,441,000	$ 10,888,200	$ 43,552,800	$160,852,800	879,558	$183
Kansas	2,003	636	42,383,480	13,457,760	2,691,550	10,766,210	39,691,930	207,880	191
North Central Texas	3,884	1,466	85,253,800	32,178,700	4,826,805	27,351,895	80,426,995	312,832	257
East Central Texas	683	208	15,026,000	4,576,000	457,600	4,118,400	14,568,400	368,725	39
Louisiana-Arkansas	2,018	423	32,580,610	6,829,335	682,935	6,146,400	31,897,675	1,309,722	24
Gulf Coast and Southwest Texas	1,863	488	73,774,800	19,324,800	1,932,480	17,392,320	71,842,320	492,585	146
Rocky Mountain	1,289	264	28,100,200	5,755,200	1,151,040	4,604,160	26,949,160	158,043	170
California	1,286	338	110,596,000	29,068,000	2,906,800	26,161,200	107,689,200	506,969	212
Eastern	4,539	568	21,695,000	2,840,000	568,000	2,272,000	21,127,000	21,571	979
Central West	3,080	765	13,244,000	3,289,500	657,900	2,631,600	12,586,100	42,471	294
Totals	25,623	6,734	$594,394,890	$171,760,295	$ 26,763,310	$144,996,985	$567,631,580	4,300,356	$132*

*Average.

INDUSTRY AS VITALLY INTERESTED IN CONSERVATION AS IS GOVERNMENT

By W. S. Farish*
President of the American Petroleum Institute

The President of the United States performed an act of statesmanship in appointing the Federal Oil Conservation Board to consider the nation's responsibility in relation to our oil supply. There is no greater duty imposed upon the nation than from time to time to take an inventory of the raw material situation of the country and of its uses.

Happily, in the case of petroleum, the interests of the nation and the consumer, and of the petroleum industry in general, in the approach to problems of supply and of conservation, are identical.

It would not be possible to fritter away the oil resources of this nation, to endanger the national defense and security, without at the same time destroying the very capital and prosperity of the oil industry itself.

If the nation's resources are being wasted in any way; if the national security and our future industrial prosperity are being jeopardized, then the nine billions of dollars of capital invested in the oil industry is equally being wasted and placed in jeopardy.

Therefore, in considering these great questions of resources, their use and conservation,—we start out with a mutuality of interest which makes for common understanding.

The impetus to scientific research in relation to the production and consumption of oil, and to a clearer understanding of the facts of the oil situation, will justify all the time and thought required by this inquiry.

This impetus to scientific research given by the inquiry being carried on by this board has already assumed practical form. Recently funds aggregating a half million dollars have been placed at the disposal of the American Petroleum Institute, to be used for scientific research. The results will be made freely available to the Government, the industry, and the public.

I am sure that at the end of your inquiry the facts of the oil situation will be more apparent than they were at the beginning. We shall not only have taken an inventory of our resources, but also will have examined the uses to which we are putting them.

Offers Cooperation

In approaching this inquiry, I wish to assure you that our spirit is well expressed by the words of Charles Evans Hughes, our representative, whose absence on account of previous engagement you and we regret.

"It will give me pleasure to undertake this representation, with the understanding that it is desired that there shall be a cordial and thoroughgoing cooperation with the Federal Oil Conservation Board in order to aid the development of the facts and the appropriate examination of the problems of the industry in the light of both private and public interests. It seems to me that such an impartial inquiry, conducted by men so eminently competent and disinterested as are the members of the Federal Oil Conservation Board, should be welcomed so that all the exigencies of the industry and all practicable methods of promoting the economical production and use of oil may be carefully considered."

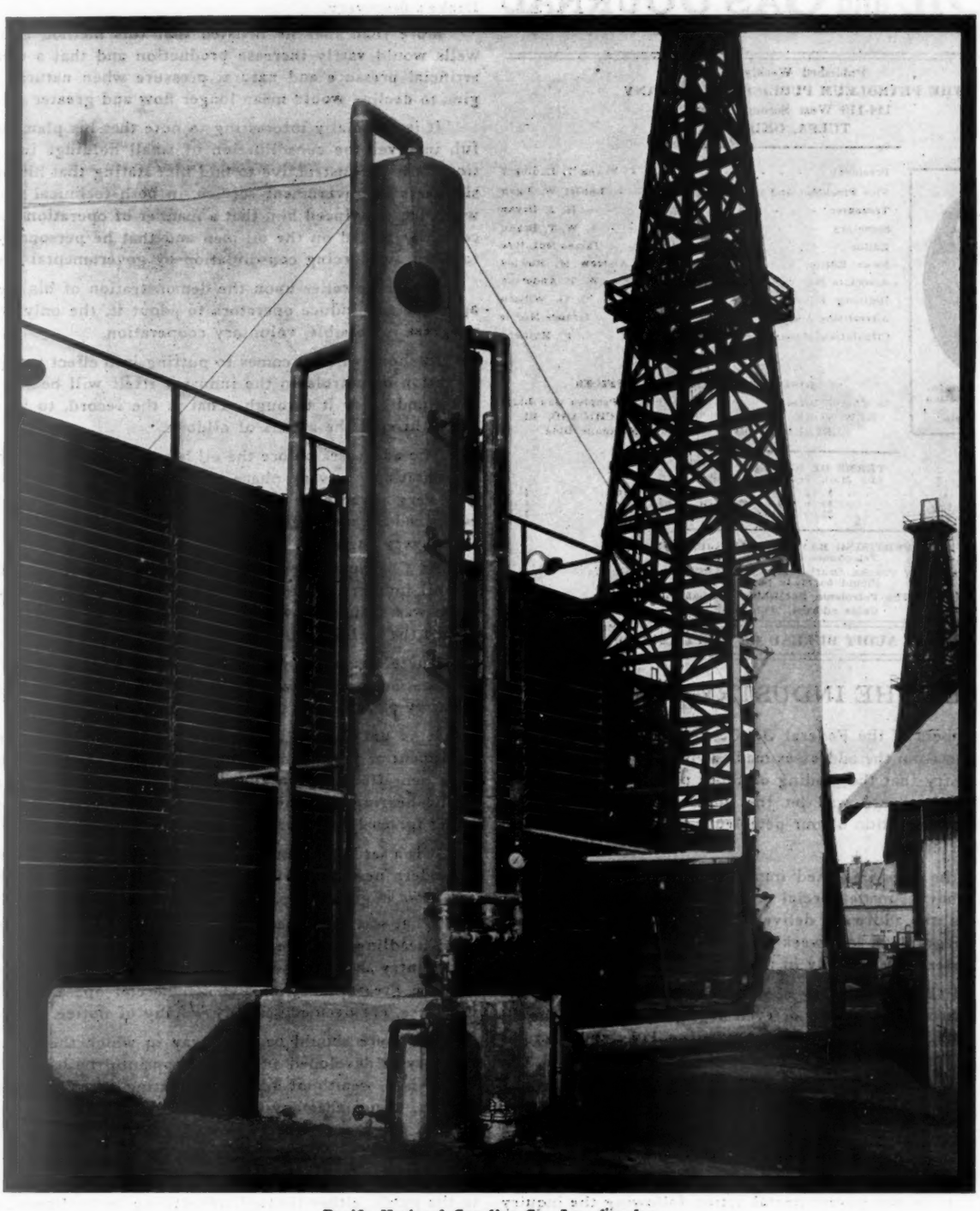
Therefore, Mr. Chairman and members of the board, on behalf of the American Petroleum Institute, the organized representative of the industry, I take the greatest pleasure in assuring you of our desire to cooperate with you in the development of every fact pertinent to the important inquiry in which you are now engaged.

*Before Federal Oil Conservation Board, at Washington.

CHECK INDIAN SPENDTHRIFTS

WASHINGTON, D. C., Feb. 16.—Indians enjoying large incomes from oil royalties and still under guardianship of the Government will not be permitted to spend their money recklessly hereafter. Comptroller General McCarl has ruled that debts in excess of $4,000 a year incurred by adult incompetents without guardians shall not be paid unless approved by the Secretary of the Interior.

ANOTHER BIG ADVANCE IN ABSORPTION PLANT EFFICIENCY



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MEMBER AUDIT BUREAU OF CIRCULATIONS

LET THE INDUSTRY DO IT

If the members of the Federal Oil Conservation Board get the same impression from the addresses made at its hearings by leaders in the oil industry that the reading of those papers conveys to the average reader the board will let the industry continue to have charge of the conservation of our petroleum without governmental or outside interference.

Realizing the unprecedented importance of the occasion The Oil and Gas Journal made special arrangements for a full report of the hearings, the addresses delivered on the opening day being reported by telegraph in last week's issue and the subsequent proceedings are covered thoroughly in this issue.

Despite all the hue and cry about waste no evidence was offered to the board of any wilful or even negligent waste by the oil industry that could be avoided under existing laws and customs over which the industry has no control.

On the contrary all the testimony showed constant and wonderfully successful effort on the part of the industry to conserve oil both in the production and refining of petroleum, handicapped though it has been by legal inhibitions against the fullest cooperation.

If there is to be any governmental action following the inquiry it should be to free the industry from hampering restrictions rather than imposing more.

Give the industry power to frame its own regulations and agreements without the fear of prosecution under antiquated statutes utterly inapplicable to modern conditions and the fullest practicable conservation of oil will become a fact instead of a theory.

What the industry has done to prevent waste in producing oil, in extracting natural gasoline, in increasing the recovery of motor fuel from crudes long thought impossible for gasoline, in perfecting oil field and refinery equipment and methods, in developing refining into a science, far transcends any possible conservation by act of legislation or governmental administration.

Even while the board was assembled to hear the arguments on theories of future supply a petroleum engineer told of a method for rejuvenating depleted wells that he asserted would recover as much oil from existing fields as we have drawn from all wells since Drake's discovery.

More than that he insisted that this method applied to new wells would vastly increase production and that a combination of artificial pressure and natural pressure when natural pressure begins to decline would mean longer flow and greater recovery.

It is especially interesting to note that his plan, to be successful, involves the consolidation of small holdings into unit operations but it is instructive to find him stating that his experience of six years in government service, in both technical and regulatory work, has convinced him that a manner of operation cannot be successfully forced on the oil men and that he personally is opposed to plans for forcing consolidation by governmental pressure.

Rather he relies upon the demonstration of his method to win approval and induce operators to adopt it, the only way in which progress is possible, voluntary cooperation.

In short, when it comes to putting into effect any plan for conservation of petroleum the industry itself will be the first to take it up and carry it through. That is the record, to be read plainly right through the annals of oildom.

The addresses before the oil board were a remarkably complete presentation of every phase of the questions under consideration. The very divergence of views brought out in the several papers evidenced the thoroughness with which the subject had been studied from every angle.

As Chairman Work said in his closing address, if the men in the oil industry were of one agreement he would have been sure there was something wrong, but out of these disagreements he expected the fullest information to come.

There has never been a like conference between an industry and the Government where so much frankness was shown and the industry put its facts so openly on the table.

It is unfortunate, however, that whereas the president's appointment of the conservation board was made the vehicle for front page sensationalism in the daily newspapers of the country, the public hearings at which the oil industry presented its case were either ignored in the press or buried in back pages.

It is a sardonic commentary on the accusation sometimes leveled at modern newspaper methods that good news is no news and only bad news is good news.

What was construed as an attack on the oil industry was given lurid headlines but the actual facts about the industry, reassuring the country about the supply of fuel for its 21,000,000 motor vehicles and the great industrial and commercial operations built around their use, are deemed scarcely worthy of notice.

Yet there should be some way in which the industry can get its story as developed at Washington into the hands of the public. There is a wealth of really interesting information in those addresses, things that anyone interested in the progress of his country and age should like to know.

Surely it can be arranged and assembled in such form by the new Public Relations Committee of the Institute as to be available to the public either through advertising or by direct contact at the service stations.

The great railroad corporations think enough of the good will of their patrons to maintain such informative contact with them. Why not the oil industry, with its vastly larger clientele and its need for protection through popular understanding against the vagaries of political misrepresentation?

The conference between the oil board and the industry has been friendly and fruitful. Is there any assurance that Congress will be equally fair-minded when the report of the board becomes the football of politics as it certainly will before the close of the chapter?

An interested and informed popular opinion would be the greatest check in the world against congressional running amuck in another agitation against oil.

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Panhandle Area in Limelight in 1926

Building of Pipe Line to Field Expected to Be Followed By Operations That Will Determine Possibilities of District

By George R. Kelley

AMARILLO, Tex., Feb. 13.—The Panhandle of Texas—what may the oil industry expect of it during 1926?

If development keeps up at anything like the pace it has started and if plans formulated by operators and under headway are carried to completion, by the end of this year the Panhandle oil field will be the most talked of area in the Mid-Continent. It is practically certain more will be accomplished this year than operators have been able to accomplish in that territory in the past five or six years combined.

By far the most important development projected for the Panhandle this year, as well as the largest ever undertaken, is the building of a 10-inch pipe line to the field. This line will extend from the big producing area in northern Carson and southern Hutchinson Counties, southeast to Wichita Falls, approximately 250 miles.

If this project is completed, and it seems to have the sanction of every major company in this territory, as well as the hearty cooperation of lease owners and royalty holders, it will be one of the largest pipe line projects attempted in North Texas territory in several years. It will have a daily carrying capacity of not less than 40,000 bbls. of Panhandle crude.

The fundamental idea is to bring the Panhandle crude from the field to Wichita Falls, where it is to be delivered, where desired, to refiners and also to the trunk lines of major pipe line concerns with connections there and carried to larger refining centers. This will afford an outlet for every barrel of Panhandle crude, through which it can be carried to Fort Worth, Dallas, Corsicana or to the Gulf Coast refineries.

Pipe Line Planned

Final details are still lacking, but the line is to be financed by operators in the Panhandle Field, lease holders and royalty owners, by big refiners and pipe line concerns and by capitalists at Amarillo, Panhandle and Wichita Falls.

Leading oil men and business men of Wichita Falls are virtually pledged to furnish not less than $2,000,000 of the $6,000,000 that will be required to construct the line and put it in operation. The remaining $4,000,000 is to be furnished by others interested. Wichita Falls parties conceived the idea of building the line and have taken the lead in the project. Practically all the pre-organization work has been done and active work of putting the line down will no doubt be started at an early date and its completion within this year is altogether probable.

Where the field is today accounting for a daily output of between 5,000 and 6,000 bbls. it could no doubt produce twice that amount. Today there are only two small pipe lines, the Pan-Tex line of 6-inch capacity running from southwestern Hutchinson County to Amarillo and the Plains pipe line of 4-inch capacity running from the field in northern Carson County to loading rack facilities at the town of Panhandle.

The Plains Pipe Line Co. is enlarging its lines into the field to take care of the production pending the completion of the big 10-inch project. The Plains Co. is the pioneer line into the district, the main pump station on Section 113 of the Burnett ranch in northern Carson County. This line is being extended down Dixon Creek to the north, and across the Canadian River to the producing wells north. This company, it is announced, will immediately lay a 6-inch loop which will extend from Panhandle to the main pump station, 16 miles, and will then extend north to the company's relay station on Dixon Creek between the Twin Six Oil Co.'s lease and that of W. T. Coble and others.

Producing Area

The present producing area in the Panhandle, excepting unimportant development in Potter, Gray and Wheeler Counties, is confined almost entirely to an area about 14 miles in length, north and south and about 12 miles in width. The southern outpost of production is on the Burnett ranch in Carson County, being the wells of Skelly Oil Co. and Silk and others on Section 93, of the Burnett ranch. The most northern production is north of the Canadian River in Hutchinson County, and is the old Dial well of the Gulf Production Co., the land now belonging to J. J. Perkins and others of Wichita Falls.

On the east outpost of production is the Crosbie well, on the Burnett ranch, Block 7, D. & S. E. Survey, while Whittington and others' well on the Sanford land, Block 82, H. & T. C. Survey, marks the western limits of producing properties. Not a dry hole mars this entire area of more than 150 square miles.

At present the southern part of Hutchinson County seems to be the main point of interest as by far the major part of the work being done is confined to this spot, the most intense activity being in Block Y, of the Morris and Cummings Survey of Hutchinson County. There is far less drilling in Carson County than there is in Hutchinson County, though the Burnett ranch in northern Carson County is the scene of oil discovery in this area. There is today a producing area on the Burnett ranch about 6 miles north and south by 3½ miles east and west.

There are nearly 100 operations in Hutchinson County alone, including locations made, rigs up and building and wells actually drilling. About half this number are listed as wells actually drilling.

A majority of the major operating concerns are in this territory already and others are going in daily. The Prairie Oil & Gas Co., the largest leaseholder in the Panhandle, is drilling two wells in Hutchinson County. The Prairie came into its principal holdings in the Panhandle through the purchase 2 years ago of the large lease holdings of the Producers and Refiners Corp.

Phillips Petroleum Corp. is very active, not only through the parent organization but through a subsidiary, the Pulaski Oil Co. There is also a report current, but unconfirmed, that the Phillips Petroleum Co. has purchased a half-interest in the Hutchinson County holdings of the Gibson Oil Corp. and that the Phillips organization will immediately take over and operate the Gibson properties.

Active in Operations

The Roxana Petroleum Corp. is also very active in this area, having two wells drilling and having contracted for the immediate drilling of two additional wells, to be started at once, both on the Smith lease. Other large lease holders are the Marland Oil Co., Skelly Oil Co., Gibson Oil Corp., The Texas Co., Gulf Production Co., Panhandle Refining Co., American Refining Co., one of the pioneers in the Panhandle, Silk and others, and a score of small independent companies, including the Twin Six Oil Co., Dixon Creek Oil Co., Canyon Oil Co., South Hutchinson Oil Co., Native Oil Co. and a score or more individuals. Marland Oil Co. is reported negotiating for the lease on the entire bed of the Canadian River from the west to the east lines of Hutchinson County.

As it stands the big royalty holders in the Panhandle Field are J. A. and G. A. Whittenburg, Johnson Brothers, Smith and others, Kingsland and the Kingsland ranch. Practically every barrel of the present production in Carson County is on the big Dixon Creek or "Four Six" ranch of the Burnett estate. This production ranges from 2,000 to 3,000 bbls. daily, depending largely on the ability of pipe lines to carry out the production.

The present storage capacity in the Panhandle is in the neighborhood of 600,000 bbls., practically every bit of which is full. The Skelly Oil Co., Gulf Production Co., The Texas Co., American Refining Co. and Silk and others each have one 55,000-bbl. steel tank. In addition the Plains Pipe Line Co. has four 55,000-bbl. tanks and the Pulaski Oil Co. is building one. The Panhandle Refining Co. has 30,000 bbls of storage and the Gibson Oil Corp. 20,000 bbls., while the Plains Pipe Line Co. has about 20,000 bbls. additional and is erecting more.

Much has been said in the past to the detriment of the grade of oil produced in the Panhandle. According to pipe line authorities the gravity of the oil is on an average 37 degrees. This gravity has been increased considerably on the average during the past few months, and it is predicted the next few months will see a still further increase in the average gravity.

Moving the Oil

Among those not well acquainted with conditions in the Panhandle, there has been considerable talk that it will take a steam heated pipe line to carry oil out of the field, especially during the cold months. Walter M. Priddy, president of the American Refining Co. and also of the Plains Pipe Line Co., who is probably the best authority on this point, contends such is not the case.

There is no disputing that the Panhandle oil is a little stubborn when exposed to low temperatures but Mr. Priddy states he has been able to keep his lines open all during this winter and not a day has passed that his line has not carried its capacity of oil, and that without heating the line. He states that, of course, his line has resorted to the method of heating the oil somewhat at the pump stations, but this is not altogether satisfactory, as it seems an easy matter to heat the oil too much. This authority is of opinion that this problem will be easily solved, especially with a large line. He believes all that will be necessary is to bury the lines deep and keep a constant movement with a reasonable amount of pressure. If this does not suffice he believes slight heating of the oil before turning it into the lines will offer the solution of the problem.

The present average daily production of the Panhandle, figured entirely on the amount of production brought out of the field by the pipe lines, ranges between 5,000 and 6,000 bbls. But those in close touch with work in the field contend it is capable of turning out around 10,000 bbls. daily and that a very conservative estimate in future developments will bring the average daily output up to 20,000 bbls. by July 1.

This estimate is made in view of the fact that practically all the acreage in the Panhandle is in very strong hands and drilling conditions there are not as favorable as in some other districts. Practically all the lease holders are strong companies with substantial finan-

Death of Hubert J. Bryan

Hubert J. Bryan, aged 66, treasurer of the Petroleum Publishing Company, publishers of The Oil and Gas Journal, died at his home in Tulsa at 2 p. m. Sunday, February 14, following an illness of 10 days.

Mr. Bryan was born in Cleveland, Ohio, in 1859, and when 20 years old entered the business office of the Toledo Commercial. He became associated with the late P. C. Boyle 39 years ago when Mr. Boyle took over the Commercial, of which Mr. Bryan was business manager until Mr. Boyle sold the paper in 1893. Mr. Bryan continued his association with Mr. Boyle with the Oil City Derrick until 1897 when he was transferred by Mr. Boyle to Bradford, Pa., as business manager of the Bradford Era, later owned by Mr. Bryan and D. A. Dennison until they sold it in 1913.

From 1913 until 1916 Mr. Bryan engaged in the oil business with headquarters at Bowling Green, Ohio, in the latter year removing to Tulsa at the request of Mr. Boyle to become treasurer of the Petroleum Publishing Company, which position he held until his death. He was a member of the Masonic fraternity, B. P. O. E., and the Royal Arcanum.

Mr. Bryan enjoyed an unusually wide friendship among oil and equipment men, his long service extending from pioneer days in the Eastern Fields. His was an exceptionally fine character and his death brought a personal sorrow to all who knew him.

He was married November 12, 1890, to Miss Minnie Temme, of Toledo, and is survived by his widow, one son, W. T. Bryan; a daughter, Mrs. W. T. Munn; and three grandchildren, all of Tulsa. A brother, W. E. Bryan, of Sylvania, Ohio, and two sisters, Mrs. Chris Peterson, Toledo, and Mrs. Joe Whiteacre, also survive him.

Funeral services were conducted in Tulsa Wednesday. Interment in Rose Hill Cemetery.

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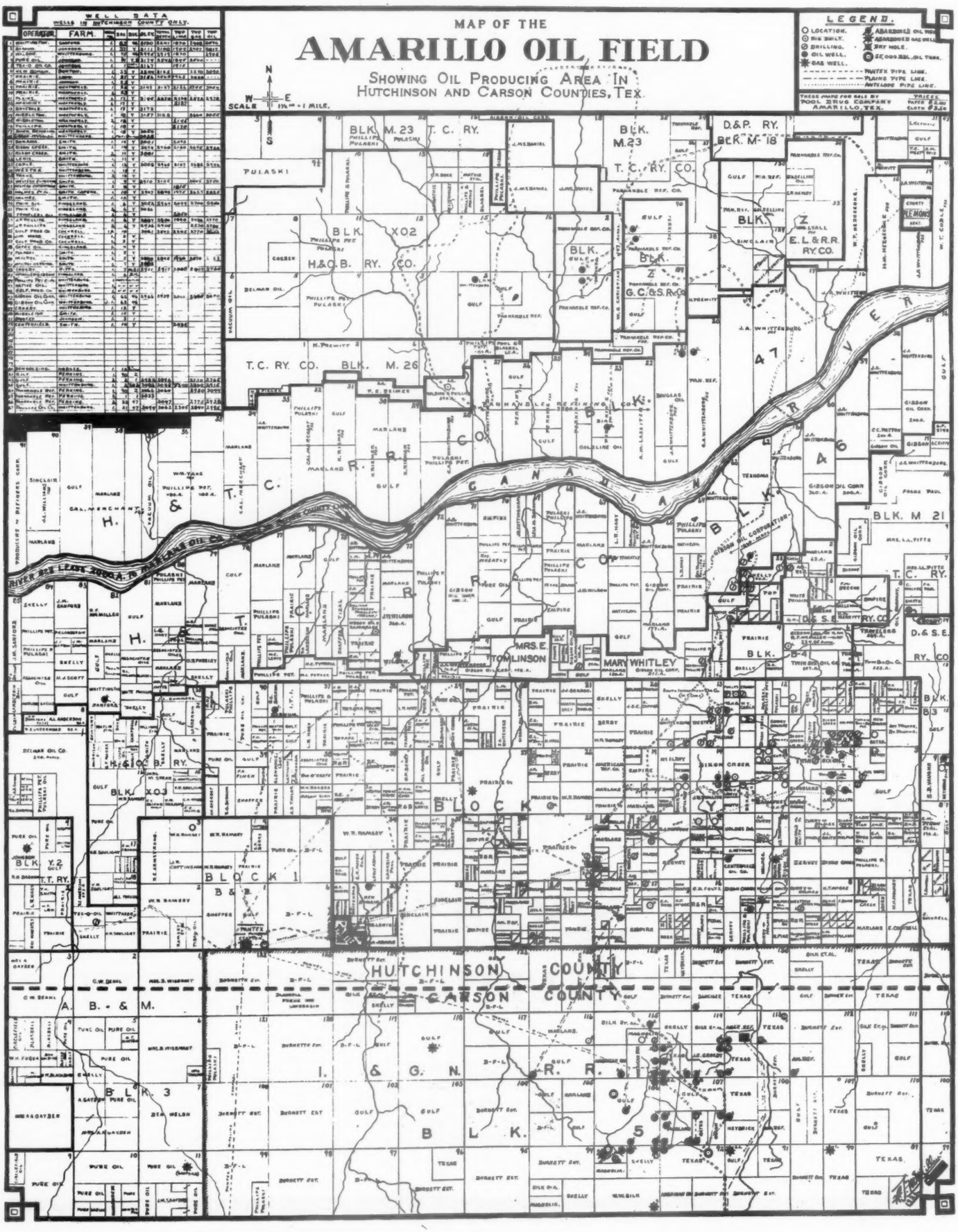
cial backing, and will develop the field along the safest and soundest lines. Nothing is being drilled at this time except necessary offsets.

Drilling in the Panhandle is unquestionably hard and the cost is heavy. The production, or at least the majority of it, is obtained from a granite wash formation. The usual depth is around 2,900 to 3,000 feet. But before reaching this depth, the drill has to pass through a body of hard lime and frequently is forced to fight its way through an excessive gas pressure that sometimes causes no small delay in completing the wells. But operators are rapidly learn-



ing to successfully combat these drilling difficulties with the result that much faster progress is being made than was the case 6 months or a year ago.

As a gas producing area, the Texas Panhandle presents probably the greatest possibilities anywhere on the American continent. At present the gas producing district in the Panhandle extends in a northwest and southeast direction for approximately 75 miles and is, roughly speaking from 12 to 15 miles in width. Scarcely a well has been drilled in all this area that has failed to produce either oil or gas in commercial quantities.

As yet there is no extensive market for Panhandle gas. About the only market is the field operations and the small amount daily consumed for commercial and domestic use in the towns of Panhandle and Amarillo. There is only one natural gasoline plant in operation in the Panhandle, that purchased not long ago by the Phillips Petroleum Co. from the American Gasoline Co. This plant has a daily capacity of about 8,000 to 10,000 gallons. At least two other such plants are being considered for the area. The Panhandle gas is rich in gasoline content, which is being utilized turning out about 8 gallons to the 1,000 cubic feet of gas.

Magnitude of Gas Field

The Panhandle territory has produced some of the largest gas wells ever drilled in the Mid-Continent. It is nothing unusual for a well to show a daily output of gas in excess of 100,000,000 feet of gas and in some instances have been known to run as high as twice that amount. It has been said the Panhandle alone could produce enough gas to supply the commercial needs of this country. Whether or not that is literally true, the statement will serve to give some idea of the magnitude of this area as a gas producing field.

Aside from Carson and Hutchinson Counties there is little of importance in the Panhandle. Of course there are vast possibilities in Gray, Wheeler, Potter and Moore Counties, not to mention bare possibilities in other counties. Production has been obtained in Gray, Wheeler and Potter Counties, though not in substantial quantities. Wheeler County produces an average of about 150 bbls. daily, while Gray County has a daily output of between 50 and 75 bbls., and Potter County accounts for an average of about 20 to 25 bbls. daily.

Conditions in these counties are very similar to those found in Carson and Hutchinson Counties, with the exception that production in Wheeler County is reported to come from a sandy lime formation and from a depth approximately 1,000 feet shallower than the granite wash production in Carson and Hutchinson Counties.

The interesting thing about the Panhandle is, that after several years of more or less intensive development it is still an unknown quantity. It may turn out to produce oil wells as large in proportion as its gas wells, and again it may not do that well. Indications are that 1926 will go a long way toward removing the question mark that the oil man for several years has been placing after, "The Panhandle Oil Field."

PRODUCTION INCREASING

BRADFORD, Pa., Feb. 15.—By means of flooding the sands and the application of compressed air to the sands the production of the Bradford Field has been steadily, if slowly, increasing. In the year 1925, the field averaged 15,925 bbls. a day. By the Bradford Field is meant all of that which lies in McKean County, Pennsylvania, and the extension into Cattaraugus and Allegany Counties in New York.

It is estimated that in 1926 the production of the field will be increased 7 per cent over that of last year, which would bring it to approximately 6,219,600 bbls., or 17,040 bbls. a day. Some optimistic operators are of the opinion that the field will reach a production of 25,000 bbls. a day before it begins to decline definitely.

Late News From the Fields

OKLAHOMA

The Sinclair Oil & Gas Co.'s Nos. 24 and 28 Walker, in Section 13-22-4w, Garber Field, which came in February 8, each making better than 5,000 bbls. a day, were down to half that production on Tuesday morning of this week. No. 24 Walker, NE cor. SE NE, Section 13, was 46 feet in siliceous lime at a total depth of 4,281 feet. It produced 5,200 bbls. of oil and 260 bbls. of water the first 24 hours. On February 15 it produced 2,854 bbls. of oil and 815 bbls. of water. No. 28, NW cor. SE NE, Section 13, was 14 feet in the pay at a total depth of 4,320 feet. It produced 5,055 bbls. the first 24 hours with no water, but on February 15 made 2,890 bbls. of oil and 795 bbls. of water. These wells shot production of the Garber deep sand up to 24,000 bbls. on one day but on Monday at 7 a. m. the production for the previous 24 hours was 17,908 bbls. The Sinclair Oil & Gas Co.'s freakish well, No. 26 Hartley, SE cor. NW NW, Section 18-22-3w, which got 70,000,000 feet of gas in an unexpected sand below 2,000 feet and later found 1,000 bbls. of oil and 470 bbls. of water in sand at 2,620-28 feet, drilled ahead and at 2,723-35 feet found a production of 2,367 bbls. of oil and 6,000 bbls. of salt water. The oil production fell off rapidly and was down to 470 bbls. on Monday. This well was drilled with cable tools after the big gas was struck, which is the probable reason the oil sands were opened.

The Wood Oil Co.'s test on the Craig farm, Section 30-14-10, was deepened to 2,909 feet and will make a 100-bbl. well it is estimated.

The Mid-Continent Petroleum Corp.'s No. 2 Earp, SW cor. NW NW, Section 8-15-6, made 970 bbls. on Monday.

The Prairie Oil & Gas Co.'s No. 1, NE SE, Section 7-15-6, which was a hole full of oil from sand at 4,076-78 feet, was deepened a foot and water rose in the hole 250 feet the first hour.

The Wilcox Oil & Gas Co. may open a northeast extension to the Stroud Field, its No. 1, C NE NW SW, Section 5,14-7, Creek County, having a show of black oil at 4,125-50 feet. This black oil showing above the regular pay is a chracteristic of Stroud.

The Southwestern Petroleum Co.'s No. 1, C NW NE, Section 11-14-5, in the southeast end of the Davenport Field, Lincoln County, which started at 800 bbls. naturally was shot with 40 quarts and produced 962 bbls. on Monday.

The Interocean Oil Co. and Roland Oil Co.'s No. 1 Bigpond, SW cor. SE NE, Section 27-17-8, produced 35 bbls. the first hour from sand at 3,142-44 feet. It flowed six hours, producing 220 bbls. and was shut in for lack of storage.

The Texas Co.'s test on the Allenbaugh farm, SE cor. SW, Section 3-11-6, Pottawatomie County, got the top of the lime at 4,630 feet with a very small showing of oil at 4,661 feet. It was drilling at 4,706 feet in the lime Tuesday morning.

Tuesday morning's report on the Ramsey's No. 4 Ames in Section 31-8-8, the new Wilcox sand area in the Wewoka district, Seminole-Hughes Counties, credited it with 1,340 bbls. production the previous 24 hours; Magnolia Petroleum Co.'s No. 1 Harjo, the discovery well, gauged 3,630 bbls. and No. 3 Frantz 1,700 bbls. of oil and 2,000 bbls. of water.

The Magnolia Petroleum Co.'s No. 2 Carolina, in Section 14-8-7, flowed 880 bbls. on Monday, 7 feet in the pay, at a total depth of 3,185 feet.

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Feb. 16.—The Big Lake Co.'s No. 23-A in Reagan County, drilled for the production in the 2,400-foot pay sand, is making 155 bbls. daily from 2,473 feet. This company is drilling its A wells to the shallow sand only. The Texon Co.'s No. 33 Group 1 University is producing from 2,915 feet, making 515 bbls. daily.

In the Oldham Pool of north Archer County the Texhoma Oil & Refining Co.'s No. 3 Wolf, producing from sand at 1,313 to 1,318 feet, is swabbing at the rate of 600 bbls. daily.

Bridwell and others have two new producers near the town of Olney in northern Young County, both on the Boren lease. No. 5 on a 10-hour test made 90 bbls. from the sand at 1,063 to 1,078 feet. No. 6 is making 100 bbls. daily from sand at 1,062 to 1,068 feet.

In northern Brown County Anderson and others' No. 1 Allen is making both oil and gas from the sand at 1,083 to 1,086 feet. It is estimated to be making 1,000,000 feet of gas and spraying about 5 bbls. of oil per hour.

In Crockett County Carl Cromwell's No. 1 Powell, formerly Wade and others', is swabbing and still drilling ahead at 2,660 feet. During the past three days the well has swabbed a total of 350 bbls. of oil.

The Canadian River Oil Co.'s No. 1 Kingsland, Section 4, Block Y, Morris & Cummings survey, Hutchinson County, in the Panhandle, was shot with 200 quarts in sandy lime at 2,858-2,938 feet and made 120 bbls. the first hour.

KANSAS

The important wildcat of Dr. R. D. Rood, NW cor. SE NW, Section 14-30-12w, Barber County, was to have been drilled in this week. Pipe is set at 2,897 feet and at 2,923 feet the well showed a 2,000,000-foot gas production. It has stood this way for about two weeks.

DRILLING IN S. E. NEBRASKA

OMAHA, Neb., Feb. 15.—W. H. Ingersoll, veteran wildcatter, and others, including the Creighton financial interests of Omaha, are drilling a test in the NE NE, Section 35-1n-1e, southwestern Jefferson County, near the Kansas line, on a large structure which extends into Washington County, Kansas.

A large-diameter hole has been started so that a deep hole may be drilled, and the well is down below 500 feet, cable tools being used. Thus far the formations have been regular, including the Greenhorn limestone (35 feet in thickness) and below it sands, limes and sandy shales of the Granerous or Carlisle series. At about 400 feet a showing of gas was found. The Lakota sand is expected around 900 feet.

Early this spring one or more deep tests are planned in Washington County, north of Omaha, on a 25,000-acre block. This enterprise is backed principally by Omaha capital.

TEXAS PANHANDLE

AMARILLO, Tex., Feb. 15.—The McIlroy Oil Co. completed a sensational well in No. 2 Smith, Section 5, Block Y, Morrison & Cummings survey, in Hutchinson County, about 40 miles northeast of Amarillo. Sand was found at 2,840 feet and was drilled to 2,875 feet. The hole filled 1,000 feet with oil. A shot of nitroglycerin brought up 125 bbls. of oil the first hour and for the first 24 hours it did approximately 1,200 bbls.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Feb. 15.—Johnson & Detray's No. 1 M. Vela on Block 4, Survey 1,012, Webb County, in the Caroline-Texas gas field, which came in for 40,000,000 feet of gas on January 26 and choked up, is now running wild and District Supervisor Blount of the State Railroad Commission has been sent for. The depth is 2,600 feet.

An expected sale to a big company of the Cin-Tex Petroleum Co.'s oil well in the Cole gas field in Duval County may delay the opening of the well and bringing it back. Negotiations are understood to be under way. Some steel storage has been completed and a pipe line may be laid to the Texas Mexican Railroad at Bruni, 4 miles away, before the well is again opened.

RATIONAL CONSERVATION IS MARK REQUA'S PLAN

By Mark Requa*

We must at all times be prepared, in so far as possible, to supply from domestic sources petroleum products in quantities sufficient to meet any National emergency. For such purposes we certainly can not rely upon foreign sources of supply.

The Government should carry in steel storage, at suitable points, not less than 100,000,000 bbls. of petroleum as Army and Navy reserves. It is an insurance policy that will far more than repay its cost; that it has not been done long ago is without excuse.

What the industry must do is to develop a program of rational conservation and present it to the Government. It may be worked out piecemeal and over years but if put upon such a foundation I am of the opinion the harassing annoyance of futile Congressional investigations will be a thing of the past and the industry can live in peace, and perform its public service without interference. An experience that would be quite as welcome as it would be new and novel. But the industry can not in full measure perform its public service without the cooperation of the Government. The obligation therefore its twofold. The relationship should be cooperative and not regulatory, for the reason that the industry is not monopolistic. Government supervision and control is the penalty of monopoly. Unless whatever action is taken is based upon sound economic principles it will fail, therefore any type of Government ownership and operation is worse than useless.

*Before Federal Oil Conservation Board, Washington.

WALKER ESTES DIES IN AIRPLANE CRASH

AMARILLO, Tex., Feb. 13.—Walker S. Estes, Tulsa oil man, and Tom Nelson, 28, and C. H. Crawford, 18, both of Amarillo, were killed when an airplane in which they were riding fell 300 feet and crashed in the street a few blocks from the main business district of Amarillo.

Organizing the American Steel Derrick Co. at Columbus, Ohio, in 1921, Mr. Estes came to Tulsa as head of the concern. In June, 1922, he took charge of and had an interest in the steel department of the Tulsa Rig & Reel Co. Last month Mr. Estes had organized a new company known as the Estes Steel Patent Co. of which he was president. He served as a first lieutenant in the Naval air service both at home and overseas during the war and was considered a very capable and careful pilot.

C. K. CLARKE PRESIDENT LOUISIANA STANDARD

SHREVEPORT, La., Feb. 15.—C. K. Clarke was today elected president of the Standard Oil Co. of Louisiana, succeeding Dan R. Weller, resigned. Mr. Clark was senior vice president of the company at Shreveport and his new duties will cause him to be located at Baton Rouge. Mr. Weller was elected a director of the Standard of New Jersey in place of the late A. C. Bedford.

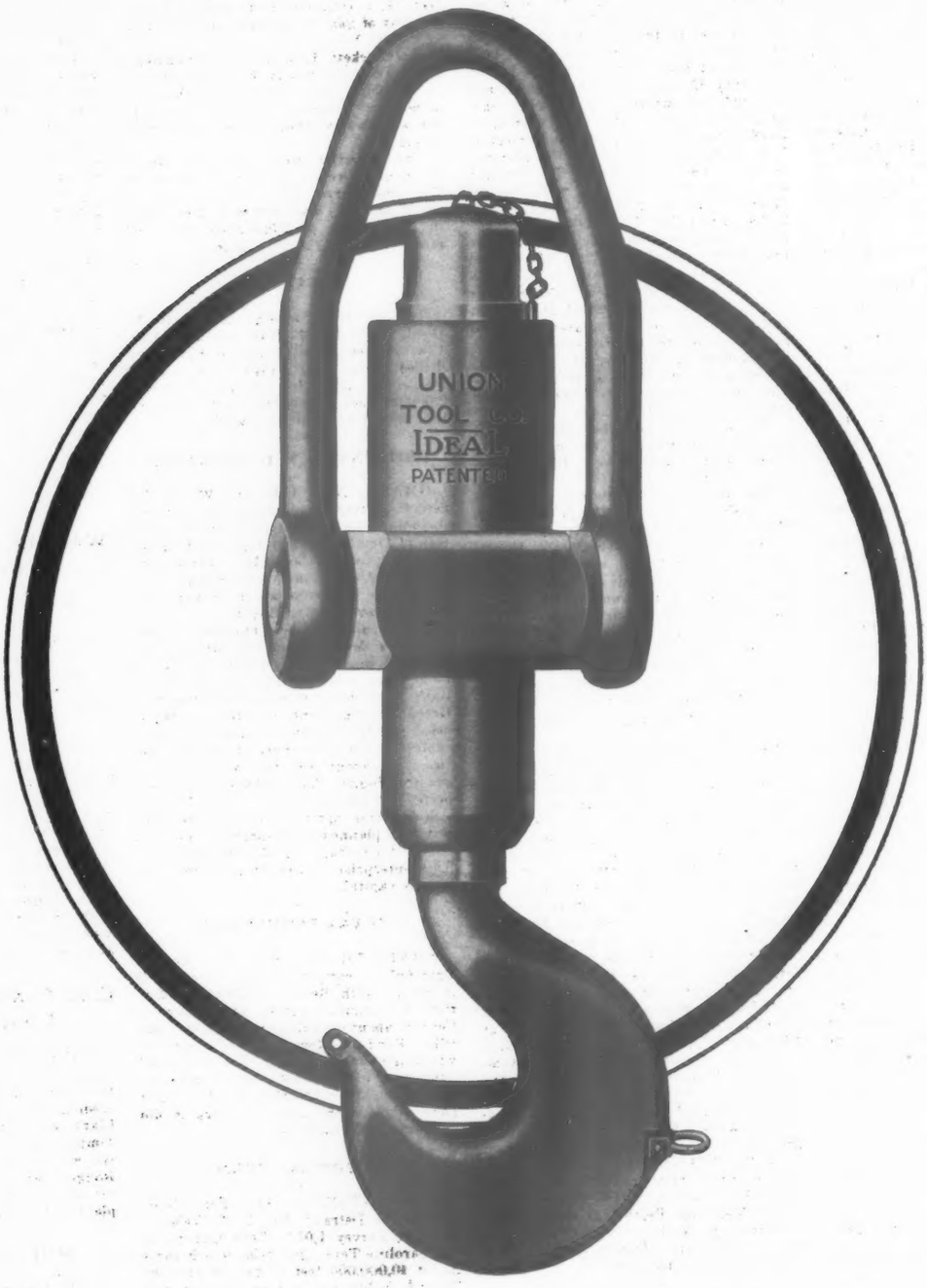
SCOUTS TO SAN ANTONIO

SAN ANTONIO, Tex., Feb. 15.—The executive committee of the National Oil Scouts association of America at Dallas has voted to hold the next annual meeting in San Antonio, May 17 and 18.

REPORTED COLE CO. SALE

SAN ANTONIO, Tex., Feb. 16.—The Cole Petroleum Co. is reported to have sold to the Houston Oil Co. its property in Duval and Webb Counties surrounding the Cin-Tex Oil Co.'s oil well in the gas field.

IDEAL SPRING HOOKS



THE
NATIONAL SUPPLY
COMPANIES

Oklahoma Field Operations

By J. L. Dwyer

Greatly increased activity in the field results from recent crude advance. Well two locations west of Phillips Petroleum Co.'s gusher in Section 2-27-5, Burbank, comes in with small showing. Good wells in Lincoln, Seminole and Hughes Counties.

Springlike weather, the recent increase in the price of crude and the hope that the market will be given another hike in the face of the increased demand and the declining supply in Oklahoma, have been the inspiration back of a recent large increase in new work. On every hand, even in some of the old, long dormant fields of the State operators have rigs up or new wells drilling which a few months ago would have not been considered. Leases between pools are being tested and real wildcat acreage explored with the drill, giving evidence of an optimism such as has not been felt in the Oklahoma Field in many months.

Osage Indians' hope for a big price on the tract north of the Phillips Petroleum Co.'s lease in the southeast quarter of Section 2-27-5, Burbank Field, received a jolt when the Phillips Petroleum Co.'s No. 5, C NW NE SE, Section 2, and two locations west of the company's big well recently completed drilled through sand from 2,958 to 3,005 feet and the well filled up only 75 feet with oil. The same company's No. 11, C SW NE, SE, Section 2, got sand at 2,911 feet, oil at 2,945 feet and was drilling at 2,955 feet with the well showing 100 bbls. a day.

The Continental Oil Co. got a good Wilcox sand well in its No. 3, NE cor. SE SE, Section 29-24-8, Osage County. Sand was found at 2,995 to 2,601 feet. The well gauged 616 bbls. the second day and 340 bbls. the third.

T. A. Johnson completed a 200-bbl. well in No. 3 Havercamp, CWL SW NW, Section 22-14-12, Okmulgee County, in sand at 1,978-82 feet.

Progress in Fairfax District

The Prairie Oil & Gas Co.'s well, which opened the Fairfax Pool in Township 25-6, Osage County, is holding up around 450 bbls. from sand at 2,677-2,722 feet. The same company was drilling below 840 feet in No. 2, C NW SW SE, Section 21-25-6. Rig is up for No. 3, SE SW SE, Section 21, and a rig is on the ground for No. 4, C SW NW SE of the same section. The discovery well is in the C SW SW SE. The Sinclair Oil & Gas Co. is drilling below 800 feet in No. 1, C SE SW, Section 21, a west offset to the Prairie's well, and is building rig for No. 2, C NE SE SW, Section 21. The Indian Territory Illuminating Oil Co. is drilling below 800 feet with another offset, C NE NW, Section 28-24-5, and the Phillips Petroleum Co. is drilling below 600 feet on the south offset, C NW NE, Section 28, and has timbers in for No. 2, C NE NW NE, Section 28.

Results in Lincoln County

The Devonian Oil Co.'s test on the Gregg farm, C NW NW NW, Section 1-14-5, Lincoln County, had only a show of oil in sand at 3,368-3,413 feet, where pay was expected; lime from 3,413 to 3,417 feet was penetrated and shale from 3,417 to 3,477 feet, total depth. It is temporarily abandoned. The same company's No. 2 Gregg, C SW NW NW, Section 1, was drilling in black shale at 3,470 feet.

The Wentz Oil Corp.'s No. 1 School land, C SW SW SW, Section 36-15-5, was drilling at 3,735 feet, bound for the Wilcox horizon.

The Mid-Continent Petroleum Corp.'s No. 2 Earp, C SW NW NW, Section 8-15-6, got sand at 4,028-35 feet and made 1,125 bbls. the first 24 hours. The Phillips Petroleum Co.'s No. 2 Patterson, C NW SE NE, Section 10-14-5, was flowing 10 bbls. an hour from sand at 3,360-70 feet.

The Southwestern Petroleum Co.'s No. 1 Robertson, C NW NW NE, Section 11-14-5, found sand at 3,365-3,411 feet and the well was flowing 40 bbls. an hour.

Big Well in Burbank Holding Up

The Phillips Petroleum Co.'s No. 16, C NE NE SE, Section 2-27-5, Burbank Field, is holding up around 2,500 bbls. a day from sand at 2,934-67. Leases immediately north and east of this Phillips lease will be offered at the March Osage sale and are expected to command high prices.

More Wilcox Wells in Wewoka

The Magnolia Petroleum Co.'s No. 1 Franz, SW cor. Section 5-7-8, which opened up a large production in the Wilcox sand in the Wewoka district, flowed an average of 3,780 bbls. a day during the week ending Saturday. W. R. Ramsey's No. 4 Amos, SE cor. Section 31-8-8, a northwest offset to the discovery well, found the Wilcox sand a little low, 4,158 feet, and at 2 feet in flowed 1,357 bbls. the first 24 hours. Just east of it and north of the discovery well the Magnolia Petroleum Co. got the top of the sand at 4,070 feet in No. 3 Franz, SW cor. Section 32-8-8, and the well produced 2,100 bbls. of oil and 2,200 bbls. of salt water the first 24 hours.

The Magnolia Petroleum Co.'s No. 2 Carolina, SW cor. NW, Section 14-8-7, Hughes County, made 800 bbls. initial production from Gilcrease sand at 3,178-81 feet. It offsets a 130-bbl. well in the same sand just north of it. A quarter of a mile north of it the Prairie Oil & Gas Co. drilled a well that developed only a hole full of salt water, from the Gilcrease.

The Gypsy Oil Co.'s No. 1 Long, NE cor. SE SE, Section 27-9-9, Hughes County, got sand at 3,350-62 feet and started off at 27 bbls. an hour. The oil was cut about 12 per cent.

Reviving Old Glenn Pool

In the old Glennpool district the Shaffer Oil & Refining Co.'s No. 2 Wa-Co-Che, NE cor. NW NE, Section 17-17-11, was shot with 10 quarts in sand at 2,464-87 feet and the well made 200 bbls. the ensuing 24 hours. B. E. Kennedy's No. 4, five acres, NE cor. SE NE NW, Section 6-18-12, was drilling below 375 feet. There are 20 operations active in the four townships included in the old Glennpool district, in Creek and Tulsa Counties, Townships 17 and 18-12 and 17 and 18-11. This area was neglected for years with only an occasional well drilling. The Enfisco Oil Co.'s No. 20 Berryhill, SW cor. SE SW, Section 18-17-13, Bixby district, was drilling at 750 feet.

Osage County Operations

The Producers & Refiners Corp. and Comar Oil Co.'s deep test, SW cor. NW SW SW, Section 8-27-6, was dry and abandoned at 3,658 feet, and the same operators abandoned No. 3, SW cor. SE SW SW, Section 8-27-6, at 2,994 feet.

The Mid-Continent Petroleum Corp.'s No. 7, NW cor. SW SW, Section 36-21-7, was abandoned as dry at 2,800 feet.

The Owen-Osage Oil & Gas Co.'s No. 357, drilled for gas, SW cor. NW SE, Section 22-28-10, was dry and abandoned at 2,173 feet.

The Indian Territory Illuminating Oil Co.'s No. 1, C NW NW NW Section 2-28-11, was shot with 120 quarts in sand at 955-80 feet, but made only a 4-bbl. well. Duffield & Howard's No. 2, C SW NE SW, Section 28-28-11, was good for 15 bbls. a day naturally from sand at 980-1,018 feet. It was planned to shoot it. The Beacon Oil Co.'s No. 7, SW cor. NE SW SE, Section 27-29-11, was shot with 200 quarts in sand at 976-1,035 feet. It made 50 bbls. the next 24 hours. The Northland Gasoline Co.'s No. 66, SE cor. SW SE NE, Section 32-26-12, was abandoned as dry at 1,-635 feet.

The Phillips Petroleum Co.'s No. 9, NW cor. SW NW SE, Section 2-27-5, Burbank Field, was drilling below 1,100 feet, and its No. 10, C SE NW SE, Section 2-27-5, was drilling at 400 feet. The Sinclair Oil & Gas Co. has a rig up for No. 1 C SE SE SW, Section 21-25-6, and was building a rig for No. 2, C NE SE SW, Section 21-25-6. The Prairie Oil & Gas Co.'s No. 2, C NW SW SE, Section 21-25-6, was spudded in and there is a rig up for No. 3, C SE SW SE, Section 21-25-6, and a rig on the ground for No. 4, C SW NW SE, Section 21-25-6. The same company has a rig on the ground for No. 2, NE cor. NE NW NE, Section 28-25-6. The Indian Territory Illuminating Oil Co.'s No. 1, C NE NE NW, Section 28-25-6, is spudded in. These operations are the most important in Osage County at this time. They are all close to the Prairie Oil & Gas Co.'s completed well which opened the Fairfax Pool.

The Mid-Continent Petroleum Corp.'s No. 8, C SE SW SW, Section 36-21-7, Pawnee County, is drilling at 300 feet. Rigs are being built for No. 15 School land, SW cor. SE SW, Section 16-20-7, and No. 16 School land, NE cor. SW SW, Section 16. The Tidal Oil Co. is drilling below 300 feet in No. 9, NW cor. NE NW, Section 21-20-7.

The Winona Oil Co.'s No. 6, NE cor. SW NE SE, Section 20-29-9, was drilling at 400 feet; Wiser Oil Co.'s No. 15, NE. cor. SW NE NW, Section 27-29-11, machine rigging up; Skelly Oil Co.'s No. 7, NW cor. NE NE SW, Section 2-27-5, rig on the ground; Phillips Petroleum Co.'s No. 6, C NE SW SE, Section 2-27-5, drilling at 400 feet.

Sidwell and others' No. 2, NE cor. NW NE NE, Section 35-24-8, was making 100 bbls. a day from sand at 2,454 feet, drilled in 1½ feet. The Tidal Oil Co.'s No. 14, C NE NE NW, Section 25-24-8, was a 20-bbl. well at 2,030-52 feet. Completion was delayed by a fishing job for liner. C. B. Peters' No. 4, SW cor. NE SW NE, Section 32-24-9, is a 15-bbl. well after a shot at 1,569-87 feet. The Indian Territory Illuminating Oil Co. completed a 100-bbl. well in No. 338, NW cor. SW NE SE, Section 27-25-11. It is producing from sand at 1,220-38 feet. C. B. Peters' No. 7, SE cor. NW SE, Section 12-23-8, got sand at 2,097-2,155 feet. It was given a 100-quart shot. It swabbed 75 bbls. the first 24 hours.

The Tidal-Osage Oil Co.'s No. 23, SE cor. NE SE, Section 32-22-10, made 5 bbls. the first 24 hours after a shot in sand at 1,655-76 feet. R. L. Martin and others' No. 1, C NE NW NE, Section 33-22-12, found sand at 1,250-1,308 feet. It was shot with 100 quarts and was being cleaned out.

The Oklahoma Natural Gas Co.'s No. 708, C SW NW NE, Section 11-21-10, got a stray sand at 1,433-43 feet with a showing of oil. Oswego lime was penetrated at 1,471-1,515 feet and the well was drilling at 1,525 feet. The Mid-Kansas Oil & Gas Co.'s No. 5, C SE NW NW, Section 11-21-10, is a 10,000,-000-foot gasser at 1,400-20 feet, a stray sand. It was mudded off. The Devonian Oil Co. and Tidal Oil Co.'s No. 1, CSL N half S half SW, Section 27-21-10, got Bartlesville sand at 1,866-1,900 feet, and shot it with 60 quarts. It is estimated as a 35-bbl. well, but is not a completion. Calvin & Belt's No. 6, C NW SW SE, Section 5-20-11, started at 30 bbls. naturally from sand at 2,383-2,426 feet. It is not complete. The Superior Oil Co. has a failure at 2,499 feet in No. 1, C W half NE SW, Section 29-20-11. The Sand Springs Home's No. 1, C SE SE NE, Section 30-20-11, is good for 15 bbls. from sand at 2,316-26 feet, not a completion. The Winona Oil Co. was swabbing 200 bbls. a day from No. 3, C SE SE NE, Section 29-20-12. The top of the Mississippi lime was found at 1,620 feet, first pay at 1,965-70 feet, and second pay at 2,044-49 feet. Interstate Oil & Gas Co.'s No. 48, NE cor. SW SE, Section 16-26-12, is shut down at 1,200 feet; Sidwell and others' No. 17, NE cor. SE NE NE, Section 35-24-8, rigged up to drill deeper; same operators' No. 15, CEL NE, Section 35, rig up to drill deeper; Bird and others' No. 1, C NE NE SE, Section 7-25-8, was drilling below 300 feet; Lewis Oil Co.'s No. 7, NW cor. SW NE NW, Section 29-25-8, rigging up; The Texas Co.'s No. 1, NE cor. NW NW NE, Section 13-24-8, rigging up; Tidal Osage Oil Co.'s No. 3, SE cor. SW SE SW, Section 24-24-8, rigging up; Foster & Davis' No. 10, C NE SW NE, Section 17-25-9, drilling below 400 feet; Amerada Petroleum Corp.'s No. 18, C SE NW SE, Section 16-22-9, rig on ground; Mid-Continent Petroleum Corp.'s No. 1, C NW NE SW, Section 16-23-10, rig on the ground. Commercial Drilling Co.'s No. 7, NE cor. SE NE SE, Section 16-21-12, spudded in.

Completions in Lincoln

Recent Lincoln County completions include the following: Pure Oil Co.'s No. 2, NW cor. SW, Section 12-14-6, dry and abandoned at 3,787 feet; Indian Territory Illuminating Oil Co.'s No. 1, SW cor., Section 20-15-5, dry and abandoned at 4,557 feet; Amerada Petroleum Co.'s No. 1, NW cor. NE SE, Section 2-14-5, sand at 3,317-77 feet, shot with 40 quarts, 737 bbls., but shot again with 100 quarts, made 940 bbls.; Carter Oil Co.'s No. 4, SE cor. NW NE, Section 2-14-5, sand at 3,287-3,404 feet, estimated at 80 bbls., not completed. Magnolia Petroleum Co.'s No. 15, NW cor. NE SW, Section 2-14-5, sand at 3,279-3,375 feet, 325 bbls. naturally, not completed. Skelly Oil Co.'s No. 4, SE cor. SW NE, Section 2-14-5, sand at 3,274-3,325 feet, 320 bbls.; The Texas Co.'s No. 3, NE cor. NW SE, Section 2-14-5, sand at 3,-270-3,370 feet, 300 bbls.; Magnolia Petroleum Co.'s No. 3, NE cor. SE NE, Section 4-14-5, shot with 40 quarts in sand at 3,442-61 feet, 127 bbls. Magnolia Petroleum Co.'s No. 1, NW cor. SW, Section 11-14-5, sand at 3,340-65 feet, sand 3,380-3,443 feet, plugged back to 3,393 feet, pumping and flowing 48 bbls.

The Texas Co.'s No. 8 Baker, SE cor. SW SE, Section 2-14-5, is a rig. Magnolia Petroleum Co. was rigging up rotary tools for No. 2 Belless, NW cor. SE SW, Section 3-14-5,. Selby Oil & Gas Co. and Southwestern Petroleum Co.'s No. 12 Bogwell, SW cor. SE SE, Section 3-14-5, drilling at 840 feet. Pure Oil Co. was drilling at 510 feet in No. 1 Strough, NE cor. SE SE, Section 4-14-5. Magnolia Petroleum Co. had ro-

tary rigged up to start No. 1 Chapman, NE cor. SE, Section 10-14-5; same company's No. 1, NE cor. NW NE NW, Section 10-14-5, was drilling below 300 feet. The same company's No. 1, NW cor., Section 10-14-5, was drilling below 650 feet. Rig is up for the Southwestern Petroleum Co.'s No. 3 Smith, NE cor. NW NE, Section 11-14-5.

Pawnee Completions and New Work

In Pawnee County, Privett Drilling Co.'s No. 1 Harned, NE cor. SE, Section 3-20-6, is a 7,000,000-foot gas well at 2,980-3,026 feet. Magnolia Petroleum Co.'s No. 1 Fugate, SE cor. NW SW, Section 9-20-6, was shot in sand at 3,058-76 feet, and flowed 300 bbls. the first 24 hours; same company's No. 4, NE cor., Section 21-21-6, an old well drilled deeper made 265 bbls. the first day after a shot in sand at 3,109-17 feet.

Mid-Continent Petroleum Corp. will deepen No. 5 School Land, SW cor. NW SW, Section 36-21-7, and is drilling below 300 feet in No. 8, C SE SW SW, Section 36-21-7; is rigging up No. 15 School Land, SW cor. SE SW, Section 16-20-7, and has a rig up for No. 16 School Land, NE cor. SW SW, and No. 17, SE cor. NW, Section 16-20-7. Tidal Oil Co. is drilling below 400 feet in No. 9, NW cor. NE NW, Section 21-20-7; Schauld & Bressen's No. 1-A Cotton, NW cor. SW NE, Section 6-20-8, rigging up tools; McMan Oil Co. and West's No. 1, C SW SW NE, Section 21-20-8, drilling below 350 feet.

The Sinclair Oil & Gas Co.'s No. 5 Brentnall, SW cor. NE, Section 10-20-8, got sand at 2,573-81 feet. The well made 70 bbls. the first day and 109 bbls. the second day. It was drilled to 2,586 feet without improvement. It may be deepened. Southwest Oil Field's Co.'s No. 16 Wasson, CEL SW NW, Section 24-20-8, is a 65-bbl. well after a shot in sand at 2,743-52 feet.

Operators Active in Creek County

C. G. Tibbens' No. 20 Con-Mei-Sen-Nei, C E half SE NW, Section 30-15-9, was spudding in. Skelly Oil Co. was building rig for No. 3 Lucas, SW cor. NW NE, Section 31-15-9. J. H. Rebold has a rig up for No. 2 Clark, SW cor., Section 22-15-10. Transcontinental Oil Co. was drilling at 345 feet in No. 1 Wright, SE cor. SW, Section 31-14-9. Wilcox Oil & Gas Co.'s No. 2 Dixon, SE cor. NW SE, Section 18-14-10, got sand at 2,876-2,960 feet, with a show of water at the bottom. The hole was plugged back to 2,913 feet and shot with 30 quarts, but it made only a 10-bbl. showing. It is not a completion. Mid-Continent Petroleum Corp. and the Continental Oil Co.'s No. 3 Mitchell, NE cor. SW NW, Section 32-14-10, got sand at 3,465-73 feet, which was shot with 10 quarts. The well was estimated at 120 bbls. but it is not a completion.

In the old Shamrock Field the Mid-Continent Petroleum Co.'s No. 24 Cole, NE cor. SE SW, Section 15-17-7, got 29,000,000 feet of gas and a showing of oil in sand at 2,925-44 feet. The same operators have a rig up for No. 25 Cole, SW cor. NW SE, Section 15-17-7. In the township east, Bu-Vi-Bar Co.'s No. 1 Province, NE cor. NW SW, Section 11-17-8, is a 3,000,000-foot gasser at 2,595-2,613 feet. Alvard & West's No. 1 Freeman, SE cor. NE SW, Section 14-17-8, shot Peru sand with 100 quarts and the well made 140 bbls. of oil and 12 bbls. of water the first 24 hours. It will be plugged back from its total depth of 2,306 feet. Black Gold Oil Co.'s No. 1 Greasy Hill, NW cor. SW SE, Section 18-17-8, swabbed 75 bbls. in 36 hours from 3,618-24 feet.

The Roxana Petroleum Corp. is building a rig for No. 1 Toney, NW cor. SE SW, Section 18-17-8. Savoy Oil Co. has a rig up for No. 2 Johnson, SE cor. NW, Section 22-17-8.

Interocean Oil Co. and Roland Oil Co.'s No. 1 Big Pond, SW cor. SE NE, Section 27-17-8, found a gritty lime at 3,017-25 feet. It swabbed and flowed 75 bbls. which exhausted the showing of oil and drilling was continued.

Carter Oil Co.'s deep test No. 2 Grayson, NW cor. SE, Section 22-16-8, was abandoned as dry at 3,736 feet. This well came in on August 23, 1923, for 4,686 bbls. the first 24 hours, at a total depth of 3,155 feet. It was drilled deeper and 5⅛-inch pipe was set at 3,387 feet. There was a small show of oil and gas and a hole full of water at 3,678 feet, and a water sand at 3,734-36 feet.

Henry & Karcher's No. 1, SE cor. SE NW, Section 36-15-7, was shot in sand at 2,517-65 feet, but showed only 5 bbls.

Roxanan Petroleum Corp.'s No. 7 Wilson, NW cor. NE NW, Section 17-15-8, is at a total depth of 4,120 feet, and the 6-inch was being underreamed to the bottom. It is an old hole drilling deeper. Bu-Vi-Bar Oil Co. has a rig up for No. 2 Narchubby, SW cor. SE NW, Section 26-15-8. C. G. Tibbens has spudded No. 3 Sewell, SE cor. NE, Section 34-15-8.

J. W. Henry was rigged up on No. 3 Doney, SE cor. NW SE, Section 2-14-8. Skelly Oil Co.'s No. 12 McKaun, SE cor. NW SE, Section 12-14-8, was a rig. The Texas Co. was drilling below 320 feet in No. 3, NE cor. SW SE, Section 12-14-8.

Okmulgee District Very Busy

A rig is up for Guy Fisher and the Carter Oil Co.'s No. 2 (Twin) Bird Creek, C SE SE SE, Section 7-10-12 in Okfuskee County. The same operators' No. 1 Bird Creek, SE cor. Section 7-10-12, made 25 bbls. a day on the swab from sand at 1,785-1,815 feet.

The Sheridan Oil Co. is spudding in No. 2 Five, CNL SE NE, Section 4-15-11, Okmulgee County. Paige Brothers have commenced drilling No. 1 Green, SE cor. NE, Section 24-15-12. Simon & Kellough will deepen No. 1 White, NW cor. NE, Section 21-14-11, total depth now 2,385 feet. Devonian Oil Co. and Independent Oil & Gas Co. have a rig on the ground for No. 14 Weisner, NW cor. NE SE SE, Section 7-15-13. Independent Oil & Gas Co. will drill deeper in No. 11 Charles, CEL NW SW, Section 1-15-14. Kingwood Oil Co. and others have a rig on the ground for No. 3-W Roberts, NE cor. NW NW, Section 32-15-14. Wick Petroleum will deepen an oild hole, No. 8 Stephens, SW cor. SE NW SW, Section 10-14-14, present total depth 1,230 feet.

The Invaders Oil Co. and Harris & Hays have a dry hole at 2,943 feet in No. 15 Miller, NW cor. NE SW, Section 16-14-13.

The Wilcox Oil & Gas Co. is spudding No. 4 Rogers, SW cor. SE SW SW, Section 1-16-11, Mounds district. J. E. Crosbie and others' No. 14-A Behen, NE cor. SW, Section 10-16-11, is a 15-bbl. Dutcher sand pumper at 2,330-46 feet. Devonian Oil Co. is building rig for No. 3 Tiger, SE cor. NW SE SE, Section 24-16-12, and Carter & Owens are building rig for No. 1 Grayson, NE cor. Section 30-16-12.

The Lenox Oil Co. will drill with machine No. 2 Jefferson, C NW NW NE, Section 33-15-15.

Production of Important Pools

Following is the daily average production of several important Oklahoma pools by company for the week ending February 10:

Garber Deep Sand

Company—	Wells	Oil	Wtr.
Carter	1	493	150
Healdton O. & G.	3	84	50
Marland-Mid-Cont. Pet.	11	1,356	2,000
Roxana	11	2,875	1,040
Sinclair O. & G.	23	14,170	5,113
Total	49	18,978	8,353

Deep Rock Pool

	Well	Output
Deep Rock Oil Co.	11	1,558
Pure Oil Co.	1	165
Mulberry Oil Co.	2	620
Amerada	2	293
Total	16	2,736

Burbank Storage

Phillips Petroleum Co.	3,716,484
Roxana Petroleum Corp.	60,198
Sinclair O. & G. Co.	2,000
Mid-Kansas O. & G. Co.	319,281
Mid-Continent Pet. Co.	261,726
George S. Bole	96,550
Gypsy Oil Co.	1,629,585
Carter Oil Co.	350,228
Dye-Tomlinson	52,486
Total	6,988,617

BURBANK FIELD
Osage County

Company—	Wells	Prod.
Lewis Oil Co.	15	963
Carter Oil Co.	281	6,484
Mid-Continent Oil Co.	106	1,285
Comar Oil Co.	7	102
Devonian Oil Co.	16	105
Gypsy Oil Co.	193	2,658
Kewanee Oil & Gas Co.	25	196
Laurel Oil & Gas Co.	16	167
Lorraine Petroleum Co.	15	83
Midland Oil Co.	38	661
Mid-Kansas Oil & Gas Co.	41	947
Peters & Oliphant	3	678
Phillips Petroleum Co.	176	10,667
Phillips Petroleum Co. and Delmar Oil Co.	16	875
Phillips Petroleum Co. and Skelly Oil Co.	180	2,632
Prairie Oil & Gas Co.	128	3,947
Producers & Refiners	29	262
Roxana Petroleum Corp.	54	526
Ryan & Reno	1	17
Simons & Moore	29	196
Sinclair Oil & Ref. Co.	144	1,486
Skelly Oil Co.	27	768
Tidal-Osage Oil Co.	42	488
The Texas Co.	16	421
Twin State Oil Co.	24	382
Total	1,622	36,999

Kay County Extension of Burbank

George Bole	3	226
Carter Oil Co.	11	729
Comar Oil Co.	19	1,048
Mid-Continent Pet. Co.	16	838
Gypsy Oil Co.	18	225
Laurel Oil & Ref. Co.	5	142
Mid-Kansas Oil & Gas Co.	10	807
Phillips Petroleum Co.	32	2,304
Prairie Oil & Gas Co.	4	106
Pure Oil Co.	5	232
Roxana Petroleum Co.	8	247
Dye & Tomlinson	8	371
Skelly Oil Co. and Phillips Pet.	20	321
Sinclair Oil & Gas Co.	5	184
The Texas Co.	16	206
Twin State Oil Co.	15	731
Total	193	8,706

TONKAWA FIELD

Company—	Wells	Prod.
Amerada Petroleum Co.	38	2,049
Blackwell Oil & Gas	31	893
Carter Oil Co.	4	82
Champlin Refining Co.	1	10
Champlin Refining Co. and Twin State Oil Co.	1	10
Comar Oil Co.	366	17,123
Mid-Continent Oil Co.	21	2,620
Gypsy Oil Co.	110	4,620
Healdton Oil & Gas Co.	26	514
Wentz Oil Corp.	55	10,354
McMan Oil Corp.	2	76
Pennok Oil Co.	32	788
Phillips Petroleum Co.	3	63
Prairie Oil & Gas	12	313
Sinclair Oil & Gas	1	7
T. B. Slick and Comar Oil	35	1,826
Southwestern Petroleum Co.	15	346
The Texas Co.	12	2,081
White Eagle Oil & Ref. Co.	7	109
Total	775	43,893

Tonkawa Deep Sand

Company—	Wells	Prod.
Amerada Petroleum Co.	8	1,323
Pennok Oil Co.	7	333
Comar Oil Co.	57	10,550
Gypsy Oil Co.	17	2,448
T. B. Slick	7	1,031
Blackwell Oil & Gas Co.	4	317
Wentz Oil Corp.	16	9,833
The Texas Co.	11	1,913
Phillips Petroleum Co.	1	21
McMan Oil Corp.	1	10
Mid-Continent and Marland	5	2,207
Total	134	29,886

Cromwell

Company—	Wells	Prod.
Amerada Petroleum Co.	8	337
Berry Petroleum Co.	1	35
Burke-Gries	4	252
Carter Oil Co.	50	2,520
Carter Oil and Gardner Petroleum Co.	5	10
Central National Petroleum Co.	8	402
Continental Oil Co.	11	1,425
Mid-Continental Pet. Corp.	32	552
Empire Gas & Fuel Co.	3	155
Gilliland Oil Co.	4	136
Gypsy Oil Co.	53	2,960
Gypsy Oil and Laurel Co.	11	358
Hoffer et al	3	204
Devonian Oil Co.	1	145
Houston Oil Co.	4	443
Independent Oil & Gas Co.	3	20
Kingwood Oil & Sinclair Oil & Gas Co.	4	77
Laurel Oil & Gas Co.	2	130
McMan Oil Co.	11	280
Magnolia Petroleum Co. and McMan Oil & Gas	6	480
Mid-Kansas Oil & Gas Co.	4	145
Magnolia Petroleum Co.	4	130
Prairie Oil & Gas Co.	14	848
Pure Oil Co.	11	249
Roxana Petroleum Co.	23	855
Shaffer Oil & Gas Co.	8	515
Sinclair Oil & Gas Co.	23	1,482
Sinclair Oil & Gas Co. and Gardner Petroleum Co.	8	565
Snowden & McSweeney	4	320
Sinclair Oil & Gas Co. and Houston Oil	5	325
Southwestern Petroleum Co.	19	1,245
Sinclair Oil Co. and Transcontinental	8	420
Superior Oil Co.	6	110
Tidal-Carter	2	188
Tidal-Osage Oil Co.	11	636
H. F. Wilcox Oil & Gas	7	175
Waite Phillips Petroleum Co. et al	18	794
White Eagle Oil & Ref.	2	30
Nowata Oil & Ref. Co.	3	110
Phillips Petroleum Co.	1	35
Total	406	20,098

Batch of Completions

Notawa Oil & Refining Co.'s No. 3, SE cor. NE SE, Section 4-13-11, made 15 bbls. the first day after a shot in sand at 1,912-30 feet. McCullough's No. 1, NE cor. SE NE, Section 15-15-12, was

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Kansas Oil Field News

By J. L. Dwyer

Kansas did not furnish any large producing wells in the past week in review, but there are signs of an unusual field activity in all the oil producing counties in the deep sand fields.

A number of dry holes, most of them tests, were reported as failures in the week end reports from the fields of that State. The Empire Gas & Fuel Co.'s No. 1 Whitling, C SE SE SE, Section 22-18-5, Marion County, was dry and abandoned at 2,350 feet. This test passed through Wilcox sand, topped at 2,132 feet. Connell and others' No. 1 Pat Coyne, C SW SW NE, Section 14-21-4, Marion County, was abandoned as dry at 2,607 feet. The Fisher Oil Co.'s No. 1 O'Connor, C SE SE NW, Section 9-21-13, Greenwood County, was dry and abandoned at 1,831 feet. Dingee, Pryor and others' No. 1 Crosby, C NE NE SW, Section 23-22-9, Greenwood County, was abandoned at 2,357 feet. This test had a hole full of water at 2,100 feet and found sand at 2,399 to 2,412 feet which put 100 feet of oil in the hole. It was shot with 120 quarts and swabbed 45 bbls. of oil. The well then went to water. It was plugged back but after having been tested was given up as a failure. The Empire Gas & Fuel Co.'s No. 161, a shallow test on its immense Wilson tract in the El Dorado Field, Butler County, CSL N half S half NW, Section 8-25-5, was abandoned as dry at 715 feet. Tom Johnson's No. 1, C NE SW SW, Section 27-26-7, Butler County, was a failure at 2,734 feet. The Kansas Central Oil Co.'s No. 1, C E half NE SW, Section 16-31-9, Chautauqua County, was dry and abandoned at 1,472 feet. Lettice and others' No. 1, C SW SE SE, Section 9-31-10, Chautauqua County, was dry at 1,587 feet. The Theta Oil Co. abandoned at 1,411 feet its No. 2 Waller, SW cor. NW NW, Section 26-31-10.

The White Eagle Oil & Refining Co. had not completed its No. 2 Pixley, C NW SW SE, Section 34-21-10, Greenwood County, which found the top of the lime at 2,149 feet and oil at 2,172-84 feet. It made 182 bbls. the first nine hours. The Phillips Petroleum Co.'s No. 2 Pedroja, C SE SW SW, Section 32-21-12, Greenwood County, is a 15-bbl. natural producer at 1,905-28 feet and No. 4 Louck, C NW SW SW, Section 33-21-12, is a 20-bbl. well at 1,903-40 feet. The Young Farm Oil Co. finished a 20-bbl. producer in No. 4 Young, SE cor. SW NW, Section 27-26-7, Butler County, at 2,160-71 feet. Travis and others' No. 6 Knutson, C NW NE NW, Section 11-27-5, started at 15 bbls. after a shot in sand at 2,695-2,706 feet.

Anderson Brothers got a 4,500,000-foot gasser in their No. 3, C SW SE, Section 16-31-9, Chautauqua County, in sand at 1,433-46 feet. The Southwest Gas Co. completed at 100-bbl. well in No. 11, C NW NE NW, Section 15-31-10, in sand at 1,338-50 feet. Sonner and others' No. 1 Webb, CNL SW NW, Section 15-31-10, is a 700,000-foot gasser at 1,131-46 feet.

Greenwood County

Stark and others' No. 1, SE cor. NW, Section 18-24-12, Greenwood County, got the top of the lime at 1,785 feet, pay at 1,803-09 feet, and it made a 35-bbl. well naturally.

Sheedy and others' No. 1, C NW NW SE, Section 19-21-10, is spudded in. The Phillips Petroleum Co.'s No. 5, C NW NE SW, Section 33-21-12, was drilling below 630 feet.

In the Scott-Teeter trend, the Greenland Oil Co. and Phillips Petroleum Co.'s No. 5 Taylor, C NW NW SW, Section 25-23-8, is spudded in and a rig is up for No. 6, C NW SW SW, Section 25. The same operators' No. 8 Craft, SW cor. NE SW, Section 25-23-8, is a rig. The same operators got a 100-bbl. well after a 70-quart shot in sand at 2,546-62 feet, in their No. 10, SW cor. NW

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Every additional domestic oil burner, every new oil burning ship or engine, constitutes but another reason for choosing the Dubbs Cracking Process

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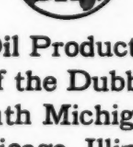

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California Field Operations

By L. P. Stockman

Fifteen completions in Long Beach, mostly in northwest extension; new wells do not hold initial production more than 10 days, while older section declines. Little drilling at Inglewood and but three or four started at Dominguez. Operators cautious. No unusually promising wildcats.

LOS ANGELES, Calif., Feb. 13.—There was very little change this week in the State production of crude oil, although the general trend continued downward. Completions in the northwest extension of Long Beach were fairly numerous but without any appreciable effect on the total field production. New wells do not maintain their initial production for more than a week or 10 days following completion and there is a general decline in the older section. There were 15 completions registered in the field and at least an equal number can be expected in the next two or three weeks. New work just about offsets the number of completions and, while the productive area has not yet been established, there have been no developments to indicate the field will exceed 125,000 or 130,000 bbls. daily as a result of this new expansion. Drilling in the Inglewood Field is at a low ebb and, while there have been three or four new wells started at Dominguez in the past two weeks, one need not have any fear of a general resumption of work as the productive acreage is held in large blocks by companies who will undoubtedly preserve the agreement not to engage in unnecessary work. There are some 8 or 10 new wells going down in the Torrance Field but they are all located in territory productive of comparatively small wells, although a 500 or 600-bbl. producer can be anticipated at infrequent intervals. Operators are gradually returning to some of the older fields for production and, while some new work has been undertaken at Montebello, Coyote, Richfield and Fullerton, it is of a minor character.

None of the various wildcats looks unusually promising at present, although the Standard's test north of Lost Hills has shown considerable gas and oil colors at various times. The present hole does not look like it will come into production but it may probably lead to further work later in the year. The acreage is held in fairly large tracts and, even though the company does eventually develop commercial production, it will be several months before drilling work will become general. As gas is general throughout the Lost Hills and Kettleman Hills areas, the showings in the Standard's test may not be more favorable than those encountered in the General Petroleum wildcat several miles away. There is one thing admitted that may tend to discourage work, the locality requires deep drilling and is handicapped to some extent with a water problem which remains unsolved.

Work in the Maricopa flats is going ahead slowly due to the desire of operators to prevent unnecessary drilling. There has been a general increase in drilling in the Ventura Avenue Field but work has not entered the competitive stage and will probably be kept in restraint. The Associated's No. 101 Lloyd, is one of the most interesting wells drilling and it is believed it will come into production when the hole is put in shape for a test.

Long Beach

The number of new wells being finished in the Long Beach Field has been increasing for several weeks and will probably continue to do so for some little time. The 15 new wells added showed an aggregate initial daily production of 5,596 bbls. Very few will continue on production at the same rate as, in keeping with the precedent by other recent completions, they will drop off from 25 to 50 per cent before expiration of the first 10 days following completion. A. J. Delaney chalked up three new completions in the northwest extension, their combined initial output being 945 bbls. No. 6 Cerritos, which started off flowing 583 bbls. daily, was the largest, Nos. 9 and 12, being comparatively small. The oil in each tested 21.6 degrees and showed a cut of approximately 2 per cent. No. 9 is rated at 200 bbls., while No. 12 is pumping 162 bbls. daily. No. 6 Cerritos was carried down to 4,450 feet, No. 9 to 4,456 feet, and No. 12 to 4,505 feet. All three were finished with 4¾-inch liners. Delaney is setting a rapid pace in this area and still has five drillers on his development chart.

The largest producer brought in was No. 1 Cerritos of the Breslin, Woodward & Sheedy interests, which came in flowing 843 bbls. of unusually clean 23.1 gravity oil. Carried down to 4,403 feet and finished with a 6¼-inch liner, 140 feet of which was shop perforated, it is flowing through a ½-inch bean under a pressure of 590 pounds. No. 1 Calahan of L. T. Edwards followed doing 760 bbls. of clean 21.8 gravity oil from 4,457 feet. This well, an offset to one of A. J. Delaney's producers, is said to have to cut into the latter's production very substantially. It is reported Delaney immediately opened negotiations for the purchase of Edwards' new producer and it is likely he will take it over. The Barry Oil Co. listed two wells for completions, both pumpers, neither having sufficient gas pressure to come in under a natural flow. No. 2 Cerritos started off pumping 240 bbls. of 21.6 gravity oil from 4,285 feet, while No. 4 is making 160 bbls. of the same gravity oil from 4,410 feet.

Complete Three in 60 Days

When the McKeon Oil Co., under the direction of Jack McKeon, finished No. 3 Cerritos early in the week, it established a record of three completions in 60 days. The new well, carried down to 4,450 feet and finished with a 6¼-inch liner, came in flowing 479 bbls. of 21.8 gravity oil cutting 2 per cent. Three additional drillers, all below the 4,250-foot level, complete the company's present operations, although rigs are going up for three more. Wheeler & O'Brien finished their initial completion in the northwest extension at 4,450 feet, and it started flowing 390 bbls. of 21.6 gravity oil cutting 1 per cent. Julian Petroleum finished another new well, No. 1 Pastle, at 4,430 feet, after plugging back from 4,438 feet, and increased its daily production 305 bbls. of 21.7 gravity oil. This company has taken advantage of the new area and is pushing work on the Aidline, Amsel, Parks, Patton, Dunlap and Mills leases. The Bess Oil Co. finished No. 1 Cerritos doing 492 bbls. of clean 21.5 gravity oil daily and immediately shifted the crew to No. 2 Cerritos, the rig for which had previously been erected. The company's initial completion, carried down to 4,293 feet and finished with a 6¼-inch liner, 98 feet of which was shop perforated, is flowing through a ¾-inch bean under a pressure of 520 pounds.

That the California Petroleum will list several new wells for completion shortly is evidenced by status of No. 1 Hilton, No. 1 Marcus, No. 1 Morris, No. 1 Cerritos, No. 1 Bryant, No. 1 Bucklin and No. 1 Weedum-Aldahl. These wells are all below the 4,000-foot level and, although one is temporarily held up with a slight fishing job, it is believed the company stands a good chance of effecting an early recovery. No. 8 Cerritos of the Craig Burns Oil Co. was only a 148-bbl. pumper from 4,365 feet but the oil, testing 21.8 degrees, was unusually clean. E. L. Craigen, who has heretofore operated in the Mid-Continent finished his first California producer when No. 1 Cerritos was given a test at 4,400 feet, after being finished with a 4¾-inch liner, 100 feet of which was perforated. It was good only for 280 bbls. of 21.9 gravity oil but comparatively clean. Craigen has two more drilling projects to complete. The Tyron-Brain Syndicate experienced considerable difficulty in finishing No. 1 Cerritos but was rewarded with a 305-bbl. well from 4,415 feet.

Ten or Twelve Wells Due

The Henderson Petroleum Corp., which established a reputation during the early days of the Long Beach Field, has listed its No. 24 as a 249-bbl. well from 4,410 feet, being finished with a 6¼-inch liner and 4,178 feet of 2½-inch tubing. The company's drilling work has been under the supervision of J. W. Henderson. A check of the drilling projects in the field indicates that operations during the coming week should be productive of an additional 10 or 12 wells, some unusually promising. The Associated cored an 8-foot oil sand in No. 1 Jonte at 4,323 feet, which should be a fairly good producer. J. B. Dabney also has a good looking project in No. 1 Todd, standing cemented at 4,265 feet. George F. Getty picked up the pay in Nos. 11 and 13, and a string of 8¼-inch has been landed in each at 4,313 feet. The United has three very promising wells, while J. E. O'Donnell has two which should be on production shortly. Several companies are scheduled to begin swabbing operations within a day or so and these wells will, of course, precede the above. The wells scheduled to be swabbed or bailed are No. 1 Bell of the Bush-Voorhies Oil Co., George W. Johnston's No. 2 Cerritos, H. L. McAdams' No. 1 Cerritos, No. 6 Cerritos of the Rainbow Petroleum and No. 77 Cerritos of the Retsof Drilling Co.

A tally of drilling work shows 68 drillers in the northwest extension below the 4,000-foot level, the majority around 4,250 feet with possible completion depths estimated between 4,300 and 4,500 feet. This is about equal to the number checked during the preceding week when 66 wells were below the 4,000-foot level. There are 34 drillers between 3,000 and 4,000 feet, about 20 of which are between 3,500 feet and 4,000 feet. Ten recent spuds are under 2,000 feet, while the bit in 14 others is being pushed between 2,000 and 3,000 feet. The finishing touches are being put on six new rigs and practically all will be spudded within a week.

Inglewood

The Standard is the only concern doing any amount of drilling in the Inglewood Field, although the Pacific and Associated are running one or two strings of tools each. The Standard has been concentrating its operations on Los Angeles Investment Lease No. 1 and several fairly good flowing wells have been completed. The completion of two new wells the past week leaves the company with but one driller on this lease and, although no additional rigs have been erected, it is probable some further work will be undertaken. The company still has several projects on the various Vickers leases and one on the Stocker, No. 4 being prepared for production at 2,193 feet. The two new wells added were Nos. 38 and 40, both on Los Angeles Investment Lease No. 1. The former was carried down to 2,195 feet and finished with an 8¼-inch oil string carrying 820 feet of 100-mesh screen, while No. 40 was drilled to 2,270 feet and finished with an 8¼-inch oil string, 675 feet of which was shop perforated. No. 38 tanked 1,206 bbls. of clean 19.9 gravity oil during the first 24 hours, while No. 40 made 630 bbls. of 19.7 gravity oil during a similar period.

The Shell has been battling with a water problem in No. 15 Rindge for several weeks, but the hole does not seem to be in any better shape. An official abandonment notice has been filed on No. 1 Cassarini of the 57 Petroleum Corp., spudded in 2 years ago. This hole since proven to be outside the productive area, was carried to around 3,500 feet by the 57 Petroleum Corp., at which depth work was temporarily suspended because of financial difficulties. The Associated, believing the property warranted a thorough test, carried it down to 4,837 feet, but later returned it to the 57 Petroleum Corp. The aban-

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TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year To Date	Same Time Last Year
Crude oil	405,807	57,973	232,155	37,165	1,257,681	1,605,907
Fuel and gas oil	78,169	11,167	315,070	45,010	528,848	81,539
Gasoline	172,503	24,643	.....	.....	656,944	151,764
Tops	.....	.....	.....	.....	74,619	.....
Coastwise—						
Crude oil	584,806	83,401	434,214	62,030	1,975,581	2,689,317
Fuel and gas oil	203,479	29,068	132,557	18,937	676,113	1,028,528
Gasoline	291,212	41,602	134,339	19,191	851,723	334,421
Kerosene	17,161	2,452	4,491	641	27,544	15,580
Tops	60,997	8,714	.....	.....	71,808	41,010
Exports—						
Crude oil	55,431	7,919	.....	.....	222,448	259,747
Fuel and gas oil	667,555	95,365	136,932	19,562	1,594,261	1,001,112
Gasoline	143,288	20,470	219,154	31,308	362,442	413,636
Tops	.....	.....	.....	.....	.....	88,932
Kerosene	.....	.....	.....	.....	99,643	167,079

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Gasoline	73,889	10,556	.....	.....	243,987	77,612
Tops	.....	.....	.....	.....	.....	232,322
Lubricants	82,025	11,718	.....	.....	82,025	81,939
Coastwise—						
Fuel and gas oil	63,517	9,074	68,715	9,816	412,265	195,826
Gasoline	98,663	14,095	100,911	14,416	334,050	373,831
Kerosene	25,463	3,638	19,660	2,809	52,910	51,931
Exports—						
Fuel and gas oil	.....	.....	240,547	34,364	312,025	184,217
Gasoline	.....	.....	.....	.....	.....	45,238
Kerosene	.....	.....	72,350	10,336	137,343	33,419

More Millions Need Gasoline

LAST year was a big year for motor car sales. Whether or not all records are broken again this year, there will certainly be a few million more cars in service. All of these cars must have gasoline and will get it.

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"Car Foundry" TANK CARS

North Louisiana-Arkansas

By M. L. Vaughn

Smackover Field production below normal owing to high water. Urania Field, La Salle Parish, with 30 wells drilling, center of interest in Louisiana. Sand conditions serious drawback. Oil and gas showings in Winn Parish. Ohio Oil Co.'s deep test at Pine Island is abandoned at 3,829 feet.

SHREVEPORT, La., Feb. 15.—Production in the Smackover Field continues below normal because of high water, figures showing a decrease instead of an increase as expected. The decline of approximately 23,000 bbls. a day, during the week ending January 30, was partially made up the following week by an increase of 13,000 bbls. daily, but the week closing February 12, showed a decline of 2,380 bbls. a day, of which 1,510 bbls. was in the Smackover Field. Louisiana production fell off 870 bbls. a day, production averaging 43,410 bbls. Total production of North Louisiana and Arkansas averaged 213,545 bbls., distributed as follows:

North Louisiana	This Week
Bellevue	2,370
Caddo, light	8,840
Caddo, heavy	2,340
Cotton Valley	3,175
DeSoto and Red River	3,890
Elm Grove	580
Haynesville	10,390
Homer	5,880
Urania	945
	43,410
Arkansas	
Smackover, heavy	140,175
Smackover, light	19,180
El Dorado	7,575
Nevada	1,670
Stephens	1,535
	170,135
Total both fields	213,545
Decrease	2,380

Urania Chief Center

With more than 30 wells drilling and the daily production steadily increasing, the Urania Field in LaSalle Parish, Eastern Louisiana is fast growing in importance and has become the chief center of interest. The Natural Gas & Fuel Co.'s big well which came in about two weeks ago making 2,500 bbls., flowed 30 hours and sanded up, was cleaned out and came back last week, flowed for 10 hours at the rate of 1,500 bbls. a day when it sanded up and stopped flowing. Sand conditions throughout the Urania Field are proving a serious drawback. The sand is very fine and wears out the cups rapidly, and none of the wells is holding up as hoped. The Natural Gas & Fuel Co. is arranging to put its big well on the beam but will probably have considerable trouble with the sand.

Winn Parish Showings

Showings of gas and oil in Winn Parish have been obtained by the Cedar Creek Petroleum Co. 3 miles south of Winnfield. No. 1 Eagles, in Section 6-10-2w, made a good gas showing at 963 feet, and Sullivan 1-A, same section, has promising indications of oil and gas. Darious Smith and others have closed a contract to drill a wildcat near Tunica, 6 miles southeast of Winnfield, and Phelps and Myrack are drilling on the Holmes lease in Section 20-9-1e, near Georgetown in Grant Parish.

Pine Island Deep Test

The Ohio Oil Co.'s deep test in the Pine Island district proved a failure and was abandoned at 3,829 feet. The test was on the Ardis lease in Section 1-21-15, 2 miles north of the Dixie Oil Co.'s deep well which was the discovery well of the Trinity sand production. The well went into salt water but has not been finally abandoned and may be drilled deeper.

J. E. Camatte of Shreveport, and T. O. Carlton of El Dorado, have contracted to drill a wildcat test at Mound, La., on a tract on which they have received a very favorable geological report. The test is in Madison Parish, on the extreme eastern edge of Louisiana, not far west of Vicksburg. Derrick is being built and it is planned to go 3,500 feet.

Completions Union County, Arkansas

Completions in the Union County area during the past week numbered 12, with two failures and 10 producers adding 118,000,000 feet of gas and 615 bbls of oil to the output of the field. Most of the completions were in the Norphlet district, with the exception of one in the light oil territory in the Louann district, and one in the Lisbon area, northwest of El Dorado.

Anderson and others went into salt water in No. 2 Murphy, Section 15-16-15, and the well was abandoned at 2,784 feet.

Federal Petroleum Co's. No. 6 Ballard, Section 10-16-15, made a 60-bbl. pumper at 2,573 feet.

Harrell, trustee, completed No. 1 Carroll, Section 7-16-16, in the light oil district, pumping 45 bbls. at 2,320 feet.

E. M. Jones completed No. 7 Murphy, Section 17-16-15, pumping 150 bbls. at 2,528 feet.

Lion Oil & Refining Co. completed No. B-3 Lawton, Section 10-16-15, making 8,000,000 feet of gas and 75 bbls. of oil at 2,619 feet, and No. B-6 Lawton, Section 8-16-15, making 35,000,000 feet of gas with a spray of oil at 2,663 feet.

Little Fay Oil Co. completed No. 5 Harrell, Section 17-16-15, making 30,000,000 feet of dry gas at 2,713 feet.

Natural Gas & Fuel Co. completed No. 4 Flenniken, Section 8-16-15, making 45,000,000 feet of dry gas at 2,750 feet.

G. H. Pace abandoned No. 1 Barnett, Section 11-16-18, at 2,341 feet. This test was located about half way between the Smackover and Stephens districts.

Rovenger Oil Co. completed No. 2 Dumas, Section 9-17-16, in the Lisbon district, flowing 150 bbls. at 2,084 feet.

Simms Oil Co's. No. 5 Cook, Section 16-16-15, made a 100-bbl pumper at 2,446 feet.

Thurman and others completed No. 4 Wilson, Section 6-16-15, blowing with air at the rate of 35 bbls. a day at 2,566 feet.

Ouachita County

Four completions in the Ouachita County area added 265 bbls of oil and 20,000,000 feet of gas to the daily output of the field.

Humble Oil & Refining Co. completed No. B-9 Arnold, Section 26-15-16, pumping 30 bbls. at 2,019 feet.

Magnolia Petroleum Co. completed No. 9 Goodwin, Section 5-16-15, flowing 135 bbls. at 2,553 feet, and No. 10 Goodwin, same section, making 20,000,000 feet of gas at 2,530 feet.

Woodley Petroleum Co's. No. 4 Richardson, Section 29-15-15, is pumping 100 bbls. at 2,070 feet.

Bellevue District, Bossier Parish

Louisiana Oil Refining Corp. completed Fee D-28, Section 15-19-11, pumping 3 bbls. at 455 feet.

Caddo Parish

In the Hosston district, the Dixie Oil Co. completed No. 2 Donovan, Section 21-22-15, pumping 15 bbls at 1,060 feet.

In the Pine Island district, O'Dell & Lawton completed No. 6 Huckaby, Section 15-21-15, pumping 50 bbls at 1,695 feet.

Homer District, Claiborne Parish

Standard Oil Co. completed No. 34 Lowenberg, Section 24-21-8, pumping 25 bbls at 1,350 feet.

Cotton Valley

Palmer Corp. completed its deep test on the Davis lease in Section 23-21-10, as a gas well. The well was drilled to 4,626 feet but was plugged back to 4,385 feet, where it gauged 7,000,0000 feet of gas.

Urania District

Alexandria Oil Co. completed No. 2 Urania, Section 19-10-2e, pumping 15 bbls at 1,591 feet.

Columbia Oil & Gas Co. abandoned No. 1 Urania, Section 22-10-2e, at 200 feet.

Natural Gas & Fuel Co. completed No. 4 Tullos, Section 25-10-1e, flowing 50 bbls. at 1,527 feet.

Tullos Oil Co. completed No. 1 Miles, Section 25-10-1e, flowing 200 bbls. at 1,541 feet.

Dowling & McCurry went into salt water in No. 1 Boatner, Section 10-19-5, 1e, and was abandoned at 1,600 feet.

Caldwell Parish

Potts & Crickett abandoned No. 1 Gore, 30-12-3e, at 2,130 feet. The test was 10 miles northeast of Urania.

Claiborne Parish

J. P. Evans and others tested salt water in No. 1 Boatner, Section 19-10-5, and it was abandoned at 2,906 feet. This test was in the Sugar Creek district, 8 miles north of Arcadia.

Ouachita Parish

In the Monroe Gas Field, the Southern Carbon Co. completed No. 47 Fee, Section 35-19-4e, making 1,000,000 feet of gas at 2,119 feet.

Webster Parish

In the Springhill district, in the north end of Webster Parish, J. F. Giles trustee, tested salt water and abandoned No. 1 Weghost, Section 20-23-11.

Victor Wenzell abandoned No. 1 Lunsford, Section 10-19-9, 4 miles north of Minden, at 2,630 feet.

Lafayette County, Arkansas

White and others abandoned No. 1 Roper, Section 27-16-23, 2 miles south of Stamps, at 2,565 feet.

Union County Drilling

A short-lived spurt of drilling activity which followed the opening up of the Lisbon territory in Union County has been followed by another dull period and the drilling wells at the close of the week numbered only 67, with 8 rigs, 17 derricks and 2 new locations.

C. H. Allison is reaming No. A-1 Fitzgerald, Section 17-18-15, bottom of hole at 2,765 feet; Arkansas Fuel Oil Co. bailing to test No. 8 Ferguson, Section 6-16-15, in 2 feet of sand at 2,545 feet; Bostick Drilling Co. arranging to pump No. 2 Hodges, Section 12-16-17, standing at 2,295 feet with 200 feet of oil in 10 feet of sand; Sam Cook arranging to pump No. 8 Tatum, standing at 2,400 feet with 2,000 feet of oil in 2 feet of sand; Estes and others junked the hole and moved over and have set 10-inch at 375 feet in No. 1 Murphy, Section 16-16-15; Gulf Refining Co. arranging to pump No. 45 Werner, Section 6-16-16, standing at 2,258 feet with 1,000 feet of oil in 20 feet of sand. Hickman and others set 10-inch at 395 feet in No. 4 Hays, Section 21-16-15.

A. L. Hunt has derrick up for No. 1 Swilley, Section 28-16-16; E. M. Jones has derrick up for No. 1 Andress, Section 16-17-16, No. 2-A Lawton, Section 10-16-15, and No. 6 Murphy, Section 17-16-15, and is arranging to pump No. 1 Murphy, Section 17-16-15, standing at 2,507 feet with 1,700 feet of oil in 4 feet of sand, arranging to test 4 feet of sand in No. 8 Murphy. Keen & Woolf are rigging up to drill No. 2 Bradford, Section 7-16-15; Magna Producing Co. is arranging to deepen No. 3 LeCroy, Section 17-16-15; Magnolia Petroleum Co. rigging up to drill No. 4 Hatfield, Section 7-16-15; Mazda Oil Co. testing No. H-4 Lawton, Section 10-16-15, at 2,575 feet.

Marine Oil Co. has derrick up for No. 1 Slaughter, Section 9-17-16; Natural Gas & Petroleum Co. tested salt water and will drill deeper from 2,680 feet in No. A-5 Harrell, Section 17-16-15. Owens and others tested dry at 2,155 feet and drilling at 2,250 feet in No. 1 Parks, Section 32-16-16; Pure Oil Co. tested salt water at 2,570 feet and is trying to pull casing in No. 8 Merriwether, Section 6-16-15. J. D. Reynolds is bailing to test 70 feet of broken sand at 2,140 feet in No. 2 Dumas, Section 15-17-16.

Rovenger Oil Corp. completed its second well in the Lisbon area and has derricks up for No. 3 and No. 4 Dumas, Section 9-17-16, rigging up to drill No. 1 Goodwin, Section 16-17-16, and No. 1 Harrell, Section 15-17-16, and has derrick up for No. 2 Goodwin, Section 16-17-16. The Simms Oil Co. has set 6-inch at 2,062 feet in No. A-1 Dumas, Section 9-17-16, and has derrick up for No. A-2, in the same section. Wingfield and others are down 1,000 feet in No. 1 Slaughter, Section 9-17-16.

Sinclair Oil Co. has made a location for No. 8 Flannigan, Section 6-16-15; The Texas Co. is bailing at 2,550 feet in No. 9 Alphin, Section 3-16-15, and has 500 feet of fluid, 10 per cent water, in the hole, and is drilling No. 2 McClannahan, Section 12-16-16, at 2,730 feet; and the Unity Petroleum Co. is arranging to deepen No. 7 Roper, Section 3-16-15.

Ouachita County

Humble Oil & Refining Co. is drilling No. B-11 Arnold, Section 26-15-16, at 100 feet, and in Section 32-15-15, coring No. 8 F. A. & B. T. Laney at 2,373 feet and No. 4 H. Laney at 2,543 feet, and arranging to deepen No. 3 F. A. & B. T. Laney, Section 31-15-15, from 2,285 feet.

Interocean Oil Co. drilling No. 2 Johnette, Section 33-15-16, at 2,200 feet, formerly known as the Livingston Oil Corp.; Magnolia Petroleum Co. drilling at 2,935 feet in the deep test No. 2 Bettie Clawson, Section 35-15-17, and bailing at 2,245 feet in No. 2 Shirey fee, Section 30-15-16. Marine Oil Co. has derrick up for No. 12 Snyder, Section 34-15-16; A. Meek drilling No. 2 LaGrone, Section 36-15-17, at 1,500 feet, and Natural Gas & Petroleum Co. drilling No. A-5 Hill, Section 5-16-15, at 1,560 feet.

Ohio Oil Co. has derrick up for No. 7 Goodwin, Section 29-15-15; Owenwood Oil Corp. arranging to pump No. 11 Snyder, Section 34-15-15, standing with 600 feet of oil in 10 feet of sand at 2,367 feet; Roxana Petroleum Corp. bailing casing at 2,410 feet in No. A-4 Bennett, Section 32-15-15, and derrick up for No. 5 Snyder, Section 34-15-15; Simms Oil Co. set 12½-inch at 455 feet in No. 5 E. J. Murphy, Section 29-15-15, and has derrick up for No. 9 Reynolds, Section 32-15-15, and the Sinclair Oil Co. has made a location for No. 9 Flannigan in Section 32-15-15.

Southern Crude Oil Purchasing Co. is rigging up to drill No. 6 Joyce, in Section 29-15-15, and No. 4 Murphy, Section 4-16-15; The Texas Co. drilling No.

(Continued on Page 208)

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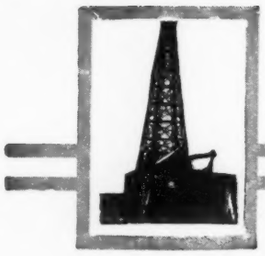


Southwest Texas Fields

By R. D. Stevenson

Cin-Tex Petroleum Co. gets oil producer in Cole Gas Field in Duval County, estimated good for anywhere from 1,000 to 3,000 bbls. Oil flows over crown block for half hour before well shut in for storage. Nothing but gas wells in immediate vicinity. Other counties showing great activity.

SAN ANTONIO, Tex., Feb. 15.—The feature of the week in southwest Texas of overshadowing importance is the Cin-Tex Petroleum Co.'s No. 1 Benavides, in Duval County, in the Cole gas field and about 1 mile east of the Webb County line, which came in Wednesday, February 10, and shot a solid stream of oil past the crown block for a period of a half hour after which the well was shut in. It is 12 miles east of the Mirando Field and 30 miles southwest of the Piedras Pintas salt dome where the Humble Oil & Refining Co. on December 20 brought in its discovery well. These two fields are the nearest production to the new gusher. Steel storage was rushed immediately to the new well. The early estimates based on the best producers in the Mirando Field was that it might possibly make as much as 3,000 bbls. which was about the maximum that any of the Mirando wells made. Or it might make only around 1,000 bbls. Casing was set and the well drilled in at 1,781 feet which is approximately the depth of the gas sand in the producing gas wells of the Cole Field. The well was expected to make gas. The bailer was run 15 times and a handkerchief was placed over the casing head. The handkerchief raised a little and the crew waited. At the end of about half an hour the well came in oil instead of gas as expected and the stream of oil continued steady for a half hour when it was shut off.

Not counting the few shallow wells on the Piedras Pintas salt dome in Duval County at Noleda this is the second producing oil well in Duval County and opens the second field. Before the second well at the Piedras Pintas salt dome deep sand could be drilled and brought in this well has opened another pool.

Among Gas Producers

With reference to the Cin-Tex well there are many interesting circumstances. It is in the east edge of the Cole Gas Field and about 1 mile east of the Webb-Duval County line. Gas producers numbering about 10 are spotted around over a territory of less than a couple of miles and some are in Webb and some in Duval County. Within about 400 feet to the west of the Cin-Tex well O. W. Killam and the Cole Petroleum Co., joint owership, drilled their No. 3 Benavides to 2,012 feet, a dry hole, that missed the gas sand through that territory found in other wells at from 1,688 down to 1,750 feet. The Cin-Tex well is producing at 1,781 feet. A little over a quarter of a mile to the northwest O. W. Killam drilled his No. 5 Benavides in the northwest corner of Block 9 of Section 10, to a total depth of 2,985 feet. He had a gas sand at 1,750 feet. Block 9, Section 10 is next northwest of Block 16, Section 10 on which the Cin-Tex well is located.

No. 4 Benavides of O. W. Killam, less than a half mile southwest of the Killam-Cole dry hole, came in a 30,000,000-foot gasser at 1,765 feet. On the next 40 to the southwest, the U. S. Gas & Oil Co. has first its No. 2 Benavides in the southeast corner of Block 10, Section 11, a 35,000,000-foot gasser at 1,688 feet, plugged back from 2,605 feet, and on the southwest corner of the same block its No. 1 Benavides, a small gas well at 1,765 feet. These wells are nearly in a line running northeast and southwest and just to the west of the Cin-Tex well.

May Be a Fault

Two of the tests having gone below the oil sand in the Cin-Tex well without getting the 1,781-foot oil sand it is naturally taken as indicating a fault line between them or else the gas in the other wells held the oil back and it was not detected. If there is a fault line then gas is being produced to the west of it and oil is found to the east of it.

Killam-Secord are drilling in the southeast corner of Block 14 of Section 11 which is across one 40 and almost due south of the Cin-Tex well. It is the next most interesting test and when it reaches the pay level, as it will do in a few days, it may throw a great deal of light on the probable trend of the field.

The Texas Co. has bought the northeast quarter (160 acres) of Survey 354, 1½ miles to the northeast of the Cin-Tex well and paid $80 an acre for it cash. Cin-Tex bought the northwest quarter of the same survey and 1 mile from the well paying $15 an acre for it. They closed the deal before the well came in.

At about the center of Survey 353, the next to the southeast from 354 in which Texas and Cin-Tex bought, O. W. Killam some months ago drilled No. 1 A. Ayres and at 1,735 feet had a gas sand of some sort but drilled the test to 1,945 feet where the returns were lost in gravel or a cavity and the well is temporarily abandoned. This test is more than 1½ miles east and a little north of the Cin-Tex well. Simms Oil Co. now has the derrick up on the Cooperative block of leases off to the northeast, 2 or 3 miles from the Cin-Tex well and will shortly spud in a test. Quite a number of wildcat tests have been drilled within a radius of 5 miles of the Cin-Tex well so that logs of wells are available to throw considerable light on the situation.

Bastrop County

Johnson Brothers, on the Trigg farm in southwestern Bastrop County, got 80 feet of Serpentine, dry. The well was bailed the past week and failed to produce. This is the third time that Serpentine has been encountered in wells in and around the Lytton Springs Field which is producing in that formation. Reiter-Foster Oil Corp. got it in No. 1 Brown at Dale in Caldwell County 5 miles southeast of the Lytton Springs Field and bailed out 1 bbl. of oil from 96 feet of sand at 1,952 to 2,048 feet. The casing was set with packer and has been pulled and the well is going on to the Edwards lime. The oil was the best showing the Serpentine has made outside of the Lytton Springs Field. Johnson Brothers had 80 feet at around 1,900 feet in their well several miles northwest of the Lytton Springs Field and Humble, as reported a few weeks ago, had the Serpentine in limited amount and showing a little trace of oil in two tests on the William Hughes survey in northeastern Travis County, 40 miles north of Lytton Springs.

Andrews Petroleum Co.'s No. 1 Brundage, a few miles east of Elgin, in northern Bastrop County, has a little evidence of oil at around 1,700 feet. Cranfil & Reynolds are rigging up on the Fisher tract north of Elgin.

Moody-Seagraves' No. 1 Tom Welder in Bee County, a few miles east of Beeville, is to be drilled in and tested out at about 2,650 feet this week. The test has been in shape to test out for some time but delayed for one reason or another. It has the possibilities of making a well. W. G. Clark is arranging to start his test at Medio Creek and to use the rig that was used on the No. 1 Scott, north of Beeville but has not yet rigged up. Some additional tests are being organized for the county.

Bexar County

Milham Corp. has abandoned its deep test in Bexar County at a depth of 5,360 feet in hard lime presumably the lower Cretaceous. It was in the northwest edge of the shallow production of Somerset. Utah Texas Oil Corp. is drilling at around 1,800 feet in its test on the Ivan Vick in the south part of Bexar County. Considerable revival of interest is shown in leases in eastern Bexar County and major companies are expecting before many months to drill that territory over again.

DeWitt County

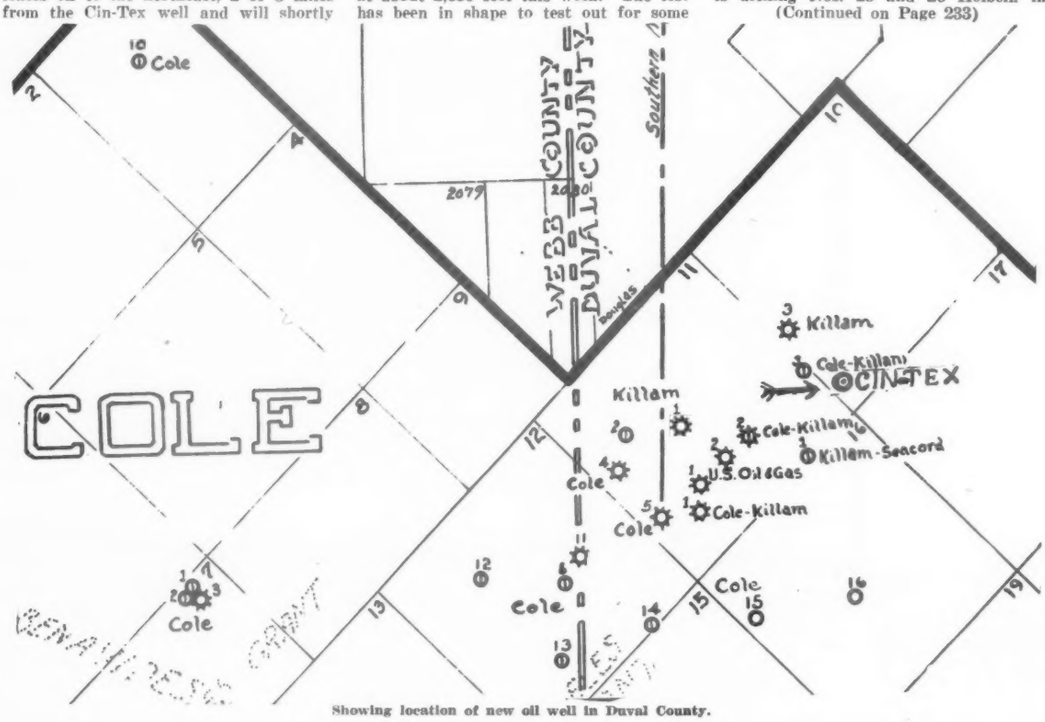
Cuero Oil & Gas Co. which set casing recently in No. 1 Holzappel in DeWitt County, southwest of Cuero after plugging back to 2,580 feet from below 3,400 feet, is to test out this week.

Duval County

Humble Oil & Refining Co.'s No. 4 Walsh, the discovery well of the Piedras Pintas salt dome at Noleda is pumping about 744 bbls. a day, that having been the actual gauge one day recently. No. 5 Walsh is below 2,200 feet. Moody-Seagraves and William F. Morgan in an offset to the west of the discovery well are drilling below 1,700 feet. Magnolia is rigging up on a location a little north of the discovery well. J. K. Hughes is still waiting for a rig with derrick up on the south edge of Survey 12, about 1,800 feet north of the discovery well. Grayburg is drilling a water well and will start soon a half-mile north of the discovery well. Laredo people are preparing to make a test and K. & S. Corp. is preparing to drill a little to the west of the discovery well. Some oil men insist that there is evidence of a fault in connection with the salt domes and are playing that with the idea that the field will string out northeast and southwest. Depth of the discovery well is 3,623 feet and the next well will not be completed before the last of March, though the Humble may be down to the sand in its No. 5 before that.

Tom Graham's No. 1 Beall in the northeast corner of Duval County is drilling at close to 1,000 feet. In the western part of Duval County, the Associated has abandoned its test on the Southerland tract. Gordon, Folwell & Dickson are drilling at 2,700 feet. K. & S. Corp. is drilling Nos. 25 and 26 Holbein in

(Continued on Page 233)



Showing location of new oil well in Duval County.

MILDREN TUBING SUPPORT

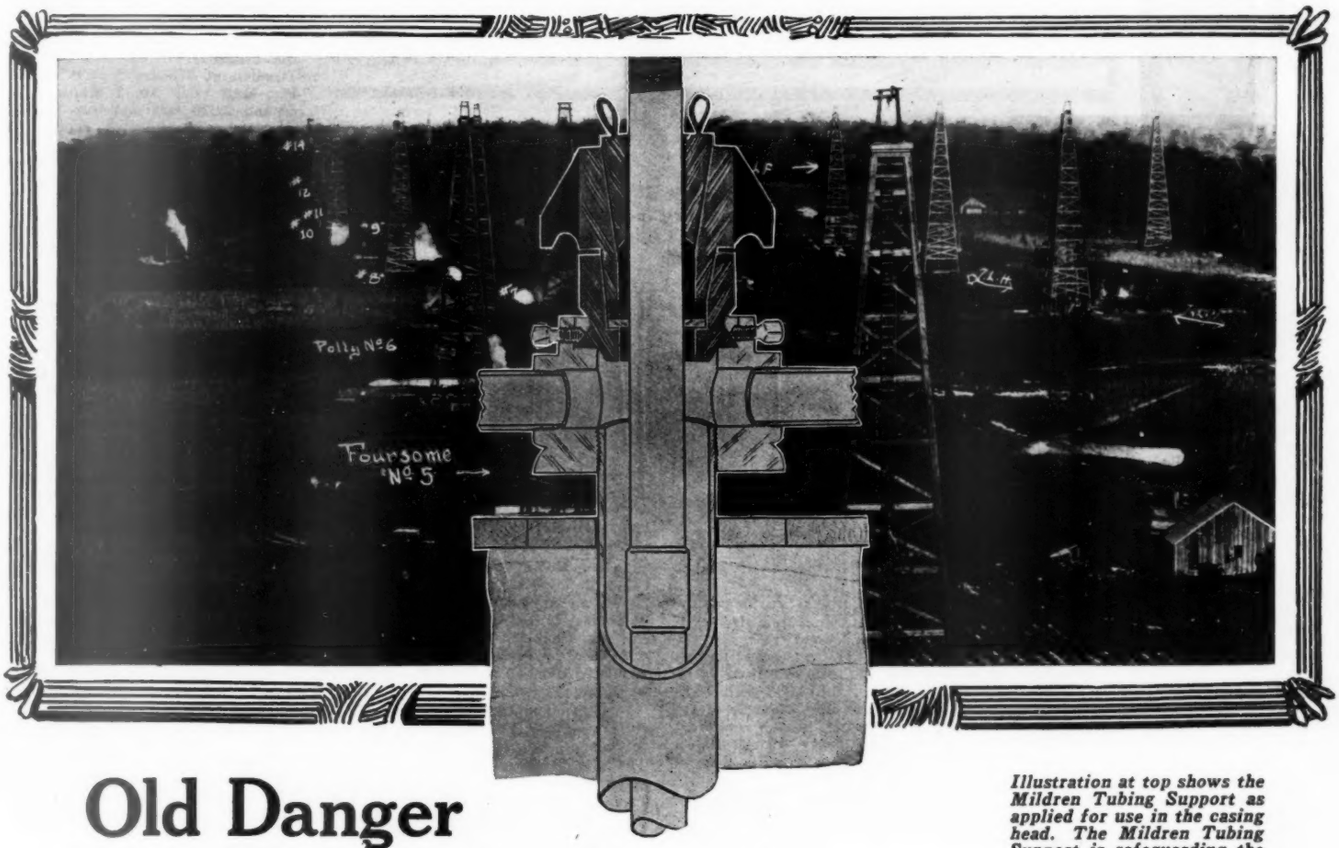


Illustration at top shows the Mildren Tubing Support as applied for use in the casing head. The Mildren Tubing Support is safeguarding the investments of large oil companies in all parts of the country.

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The MILDREN TUBING SUPPORT increases the factor of safety in running tubing and is used extensively for setting up tubing couplings and insures the accurate setting of a Packer at any depth in the hole.

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Gulf Coast Oil Operations

By P. L. McGreal

Coastal production again above 100,000 bbls. with gain of 2,221 bbls., while Southwest declines. Twenty-four completions, nine dry and two salt water, with 4,965 bbls. new production. Texas Co.'s No. 3 Taylor, Boling Dome, proving best well in several years in the coastal region.

HOUSTON, Tex., Feb. 15.—Coastal gross production mounted above the 100,000-bbl. mark again during the week. The estimated daily average gross for the week ending February 13 is placed at 101,766 bbls., an increase of 2,221 bbls. compared with the previous week. Completions at Blue Ridge, Big Creek, Hull and Orange swelled the average.

Of the gross, 91,101 bbls. are credited to the South Texas pools and 10,865 bbls. to those in south Louisiana.

The following is the estimate for each pool:

Pool—	Gross Bbls.
Boling	4,200
Batson	1,480
Blue Ridge	1,500
Barber Hill	115
Big Creek	3,010
Dayton	45
Damon Mound	975
Edgerly, (La.)	250
Goose Creek	10,250
Humble	5,500
Hull	18,350
High Island	450
Jennings, (La.)	1,020
Lockport, (La.)	2,735
Markham	75
Orange	14,100
Orchard	475
Pierce Junction	1,276
Piedras Pintas	600
Spindletop	5,925
Saratoga	1,425
Sour Lake	4,210
South Liberty	7,350
Vinton, (La.)	6,650
Welsh-Anse La Bute (La)	80
West Columbia	9,460
*Miscellaneous	160
Total	101,766

*Includes Nacogdoches, Washington County, Kingsville section and other spots. Humble Co.'s well in Liberty County shut in, good for 800 bbls. Not included this week.

The Orchard Pool is in Fort Bend County, newly opened by the Gulf Production Co., one well there. Nash Pool is 7 miles east of Damon Mound, with one well shut in. The Humble Oil & Refining Co. is laying 12 miles of 8-inch pipe line from its West Columbia station to connect with the Nash well owned by the Rycade Petroleum Corp. The Texas Pipe Line Co. has about one-half of the 22-mile line from its West Columbia station to Boling Pool laid. Meanwhile the production is being shipped out in tank cars, while part of it is being used for fuel by rigs drilling there.

The Humble Oil & Refining Co. is shipping its Piedras Pintas crude in tank cars from Noleda on the Tex-Mex railroad. The well is close to the tracks.

Southwest Fields

The estimated daily average gross output of the Southwest Fields for the week of February 13 is placed at 37,905 bbls. The estimate for last week was 38,570 bbls. The estimate for each field is as follows:

Field—	Gross Bbls.
Luling	20,000
Laredo	3,510
Somerset	2,410
Calliham	245
Rockdale-Minerva	985
Jim Hogg County	3,125
Lockhart	7,630
Total	37,905
Grand total for week	139,671
Grand total last week	137,450
Net increase	2,221

Completions during the week number 24, 9 being dry and two salt water holes. The new production totals 4,965 bbls. At the close of the week 10 wells were bailing.

The status of the wells completed late last week is as follows: Sun Oil Co.'s No. 76 Hooks, on the north side of the Batson Pool, dropped from 1,200 bbls. to 200 bbls. The Peer Oil Co. is putting its No. 1 Christian on the beam. It will not flow.

The Gulf Production Co.'s No. 1-A Chesson and 8 Hager in the Orange Pool, reported originally as 1,800 and 1,500-bbl. wells, are still flowing 1,500 and 1,300 bbls. respectively.

The deep sand well of the Yount-Lee Oil Co. on the southeast side at Spindletop, is flowing 4,200 bbls., 20 per cent water. It has been flowing since January 13, making 5,000 bbls. initial through a choker.

The Texas Co.'s No. 3 Taylor on the southwest side of the Boling Dome, is the best well in several years in the Coastal region. It has been flowing since December 14, with very little variation. The sand is at 3,338 feet. The Boling Dome is the most westerly of the Coastal group, being in the southeast part of Wharton County, 12 miles west of Damon Mound and 22 miles west of West Columbia.

Completions

At Big Creek, in Fort Bend County, the Gulf Production Co.'s No. 27 Davis, is flowing 600 bbls. at 2,700 feet. No. 26 is drilling below 3,500 feet and No. 28 is starting to drill.

At Blue Ridge, the Navarro Oil Co.'s No. 1 Cain is flowing 500 bbls. at 3,850 feet.

In the Batson Pool, The Texas Co. abandoned No. 1 La Jarza on the east side at 3,900 feet. This was considered an important test as a possible deep sand extension in that direction. The Paraffin Oil Co.'s No. 64 fee, is pumping 20 bbls. at 845 feet. The Ada Belle Oil Co. abandoned No. 104 Davis at 1,080 feet.

In the Goose Creek Pool the Humble Oil & Refining Co. is bailing Nos. 1 and 66 Smith at 4,850 and 2,600 feet respectively. The Gulf Production Co.'s No. 11 Chapman-Bryan is bailing at 4,250 feet, as is the Sun Oil Co.'s No. 1 Bartlett-Smith at 2,575 feet. Both are work-overs.

In the Republic Production-Houston Oil Co.'s joint No. 59 Dolbear on the east side of the Hull Pool was deepened to 2,375 feet and came back flowing 2,000 bbls. The Gulf Production Co.'s No. 60 Phoenix is pumping 125 bbls. at 3,000 feet and the Higgins Oil & Fuel Co.'s No. 5 Taylor is a 125-bbl. well at 3,100 feet. The Houston Production Co.'s No. 10 Barngrover will pump at 3,170 feet.

At High Island in Galveston County, the Gulf Production Co. worked over No. 2 Smith on the south flank of the dome. It is making 250 bbls. It abandoned No. 4 Smith at 3,200 feet. The Island Oil Co. quit No. 1 McCarthy at 2,275 feet and the Transbay Oil Co. abandoned No. 13 Tierman at 275 feet. It is rigging No. 14. Gulf Co.'s No. 1 Smith is drilling around 2,670 feet and Sun Co.'s No. 6 Cade set and cemented casing at 2,375 feet.

In the Orange Pool, the Continental Oil Co.'s No. 14 Chesson got salt water at 4,650 feet. No. 7 Chesson is bailing at 3,050 feet. The Gulf Coast Oil Co.'s No. 1 Leon, a work over, is bailing at 2,750 feet as is the Peer Oil Co.'s No. 1 Mecom at 3,425 feet.

The Gulf Production Co.'s No. 215 Gladys at Spindletop is pumping 100 bbls. at 850 feet. Paggi Brothers' No. 8 Lewis in the Saratoga Pool will make a pumper at 1,490 feet and the Gulf Production Co.'s No. 60 G. Hardin in the Sour Lake Pool is a 75-bbl. well at 1,900 feet.

The Gulf Production Co. abandoned No. 6 Thomas off the Fannette Dome in Jefferson County at 1,150 feet.

In the Jennings (Evangeline) Pool, in south Louisiana, the Gulf Refining Co.'s No. 38 Jennings-Clement is bailing at 2,225 feet.

Two formation tests were abandoned off the Boling Dome. The Texas Co. quit No. 1 Pryor at 500 feet and Weed and Gayle's No. 4 Feltz at 455 feet.

At West Columbia the Humble Oil & Refining Co.'s No. 2 Wilson is pumping 50 bbls. at 3,950 feet. No. 1 M. & W. is a salt water hole at the same depth. The Gulf Production Co. abandoned No. 3 Underwood at 3,400 feet. The Texas Co. is bailing No. 22 Arnold at 3,250 feet.

The runs of the Magnolia Petroleum Co. from the Luling Field during the month of January were 196,851.08 bbls. Runs by the same company from the Lockhart (Lytton Springs) Field were 150,409.87 bbls. and from the Laredo Pools 34,873.88 bbls.

Drilling in the Pools

Three tests in the Boling Pool were threatened with gas blowouts during the week and oxide of iron was mixed with the mud pumped into the holes. The Atlantic Oil Producing Co.'s No. 1 Taylor is in the sand below 3,300 feet. No. 2 is around 2,175 feet and No. 3 at 2,610 feet with a derrick up for No. 4 Taylor. These are northwest of The Texas Co.'s producer. No. 4 Taylor is at 3,235 feet. No. 6 Taylor is drilling around 1,500 feet with Nos. 5 and 7 rigging. No. 1 Floyd is also rigging to start drilling. The Sinclair Oil & Gas Co.'s No. 1 Taylor is around 2,845 feet. A derrick is standing for No. 2 and locations made for Nos. 3 and 4. The Sun Co.'s No. 1 Taylor is around 3,000 feet. No. 2 Taylor is at 2,075 feet. The Gulf Production Co.'s No. 1 Chase is around 2,155 feet. The Humble Oil & Refining Co.'s No. 1 Hawes is below 1,444 feet. The Oxford Oil Co. (T. H. Bass) has two rigs running. No. 1 Rogers is around 1,975 feet and No. 1 Floyd around 1,000 feet. Murchison & Floyd is drilling at 965 feet. The Vacuum Oil Co. made a location.

On the southeast side at Spindletop, the Yount-Lee Oil Co. is rigging up No. 4 McFadden. Its No. 2 Gladys is drilling at 1,965 feet. In the old pool the Stella Oil Co.'s No. 19 Hogg-Swayne is at 900 feet. The Tyson-Winder Oil Co.'s No. 3 Chesson is at 660 feet.

In the Saratoga Pool, the San Bernard Oil Co.'s No. 19 Hooks is at 990 feet. The Rio Bravo Oil Co.'s No. 3 Fountain is drilling around 1,900 feet. The Vacuum Oil Co. is rigging No. 3 Teel, on the southwest side, which is practically a wildcat test.

New Mexico Field Operations

By Special Correspondent

ARTESIA, N. Mex., Feb. 13.—Official pipe line runs of the New Mexico Pipe Line Co. and the Illinois Co. for the month of January show 111,090 bbls. run, exclusive of crude used for drilling in the field. This is coming from 131 producers.

Drilling has been resumed on the Arkansas Gas & Fuel Co.'s No. 1 Manning Dome well in Section 15-15-17, the hole now being down 3,360 feet. Through an erroneous report, statement was made that this test had been abandoned due to having drilled into the granite. While the bit had not penetrated the solid granite, which has been encountered in a number of wells in the central part of New Mexico, a strata of "arkose" was drilled above the gray sandy lime which is the present formation. Arkose is a granite wash or granite worked over into a standstone with considerable feldspar remaining.

Two wildcat tests, one to the north of the productive area and the other west of the Pecos River, are attracting attention. North of the field, in Chaves County, the Southern Exploration Petroleum Co.'s No. 1, in Section 15-15-29 picked up a sandy lime at 3,003 feet, which is carrying considerable oil. This is the third sand encountered in this hole.

West of the river, the McFrederick-Eppenauer No. 1, in Section 15-19-25, after drilling through 14 feet of dry sand below 2,650 feet, drilled into an additional 12 feet of the same formation which carried considerable free oil.

In the north end of the field, the deep test being drilled by The Texas Co. has been delayed by a fishing job at 3,180 feet, it being necessary to run a light shot to jar loose a lost bit.

Three completions were made in the proven area. The Maljamar Oil & Gas Corp. has a 75-bbl. producer in No. 14 in Section 28-18-28, given a shot from 1,995-2,027 feet.

In Section 17-18-28, the Williams Petroleum Co. has a good well in No. 4, given a shot from 2,143-70 feet. In Section 5-18-28, the Ohio Oil Co. has a nice completion in No. 7 on the New States lease, shot at 2,363 feet.

The Frontier Petroleum Co.'s No. 11 McQuigg, in Section 4-18-28, is below 2,180 feet and will be completed in a few days. In Section 18-18-28, the Levers-Wilson No. 2, in the NW SE, is reported to have struck the pay at 2,068 feet, having drilled in 19 feet.

In Section 16-18-28, the Hausenfuse, Donley, Compton No. 1 is drilling below 2,400 feet. Seven sands have been picked up in this hole, with the best pay from 2,370 to 2,391 feet.

Water has again broken through in the deep test of Snowden-McSweeney on the McNutt permit in Section 4-21-30, this time at 4,412 feet. This will be cemented off and the hole drilled deeper.

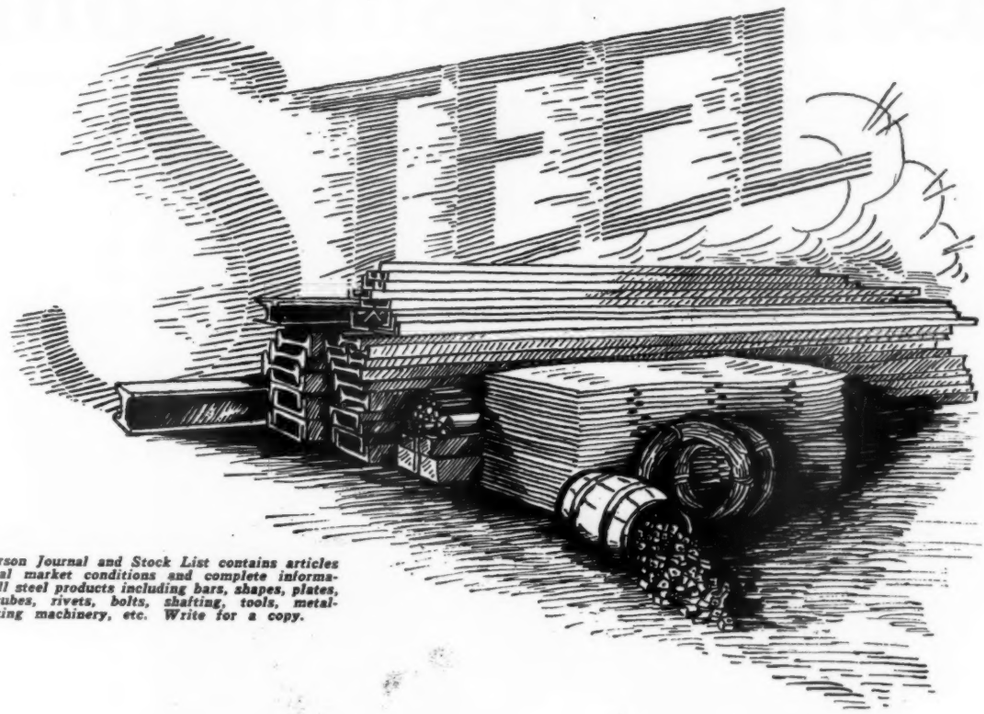
While being cleaned out, the Ohio Oil Co.'s No. 1 on the Toomie Allen lease, in the SE of Section 28-18-28, is swabbing 100 bbls. daily.

An offset is being drilled to the Picher No. 1 on the Cronin permit, which while a small producer has been consistent since its completion a year ago.

The Magnolia Petroleum Co. has purchased a block of 760 acres, 3 miles south of the Manning Dome, being drilled by the Arkansas Fuel & Gas Co. Other major companies have been purchasing and blocking considerable acreage in the vicinity of this test.

SHIPPING BOARD CUTS FUEL

A reduction of about $2,500,000 has been made in the $35,000,000 fuel oil bill of the Shipping Board during the past year through more efficient methods of oil burning.



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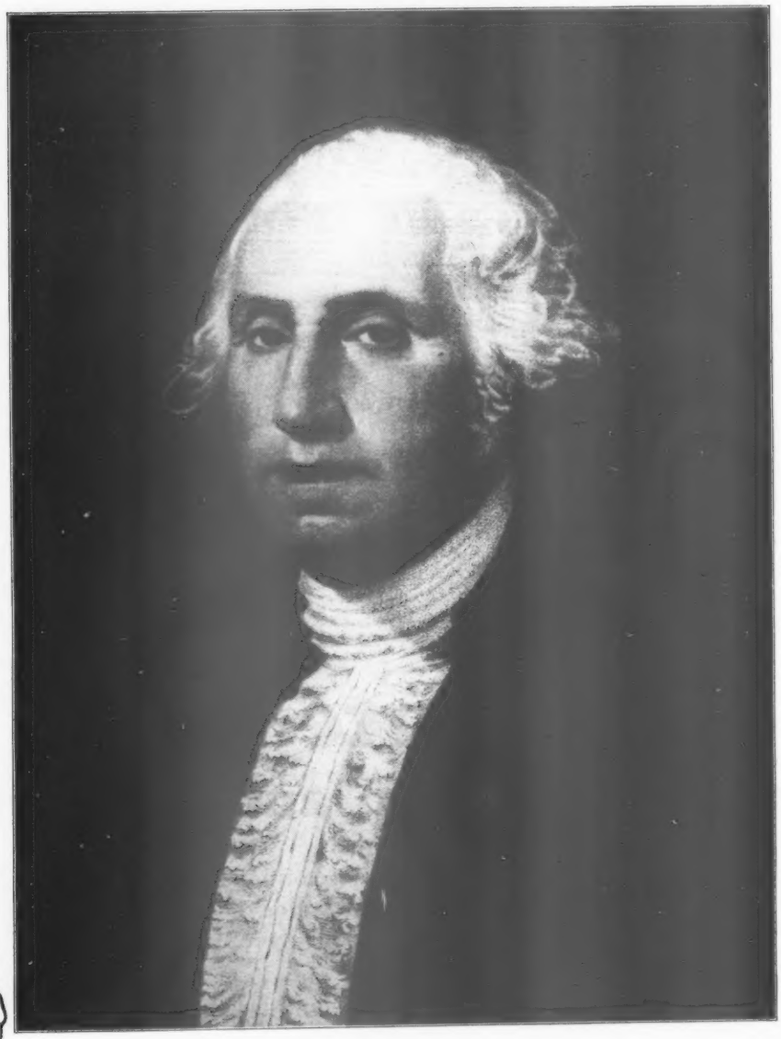

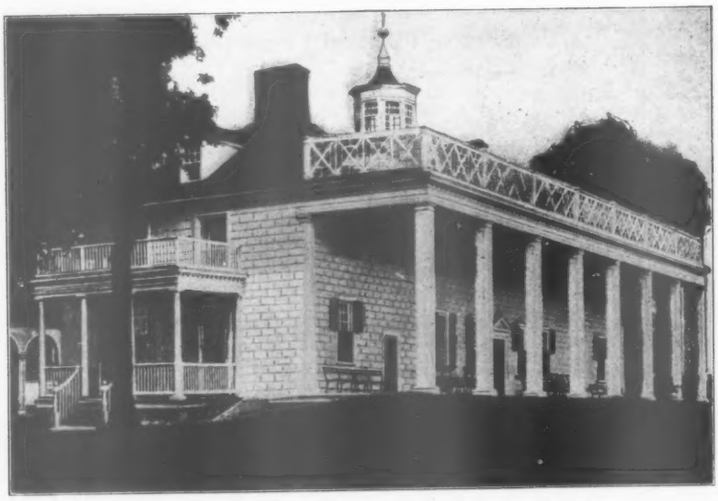

Mt. Vernon—George Washington's home in Virginia

we honor thy memory

As the great Lincoln once so simply expressed, "It would be as useless to attempt to add glory to the sun as it would to the name of him who has been so rightly called the father of our country." So it is with no thought other than to renew our memory that we reconsider some of his outstanding characteristics.

Dependable, with unerring judgment under the most trying circumstances; loyal to himself, his beliefs, his country and his friends; a lover of simplicity and honesty; a despiser of anything that suggested deceit or sham—that in brief is why we Americans one hundred years after his death still love him.

Nowhere will you find men who honor these characteristics more than right here in Mt. Vernon, Ohio. Our city itself, named after Washington's home, has always been a reminder to the men and women who live here that these same personal qualities are still to be desired. Just as the very architecture of Mt. Vernon (Washington's home in Virginia) exemplifies simplicity and sincerity, so the old homesites of Mt. Vernon, Ohio, and the people who live in them represent the same dependable qualities. Strangers who visit our city comment upon its genuine democracy, its friendliness and its respect for the more substantial realities. No exceptionally rich people live here, yet few very poor people, and in all the world I have yet to find a man who ever lived here but who some day expects to come back.

For ninety-two years there has gone out from this place machinery bearing the name "Cooper" built by men who have always been dependable, loyal to themselves, their country and their friends, who have loved everything that is honest and hated everything that is false. It has been backed by an unswerving policy which demands that every defect be made right. It is, therefore, not unusual that confidence in such a name should spread and that increasing numbers of companies should use only gas engines and compressors marked with the name "Cooper".

The C. & G. Cooper Company

Tulsa, Dallas, Mt. Vernon, Ohio, Los Angeles

Memorial Building, Mt. Vernon, Ohio, patterned after Washington's home on the Potomac

Rocky Mountain Area

By F. B. Taylor

Midwest Co.'s deep test, Salt Creek, finds Tensleep sand water bearing. Collapsed casing in Cane Creek well, Moab, Utah. Prairie Co. well in Lost Soldier making 15 bbls. hourly from Sundance. Homestake Exploration has 2,500-bbl. well and Dakota-Montana 2,000 bbls., Kevin-Sunburst.

CASPER, Wyo., Feb. 13.—The deep test drilled by the Midwest Refining Co. on Section 25-40-79, has reached the Tensleep sand and found it water bearing. The well was drilled to a depth of 4,120 feet and found both the Sundance and Tensleep with water in them. The well is flowing a big stream of fresh water, with a temperature of 167 degrees, from the Tensleep. The flow has a surface pressure at the casing head of 150 pounds.

This means that the Tensleep sand at Salt Creek is not an oil bearing horizon. Ever since the second Wall Creek sand in that field showed the operators there were further possibilities lying below the first Wall Creek sand, many theories have been put forth as to the possibilities of oil in deep the sands which the Midwest well definitely sets at rest as to the Embar and Tensleep sands. There are still the Amsden and Madison lime lying below the Tensleep, but because of the great depth, the low grade of crude that would be found if these sands did contain oil, and the trouble to be encountered in shutting off the water in the Tensleep sand, it is considered very doubtful if a well will ever be drilled to either the Amsden or Madison.

All the sands at Salt Creek are exposed at the base of the Big Horn Mountains, about 50 miles west. When the Big Horn and other mountain ranges were formed in this region, the granites and other Azoic rocks pere pushed up through the surface overlay of sedimentary rocks and broke these surface strata so the erosion carried away much of the sedimentaries. Along the base of the mountain uplift, these strata of sedimentary rocks are exposed in a tilted form so that in the case of porous sandstones, water coming down the flanks of the mountains finds its way into the sands and penetrates to great depths under the surface.

Along the base of the mountain ranges, the escarpments lie at a higher elevation than the surrouding country and the water, once entering the porous sands, is trapped by the shale strata above and below the sand and eventually fills the sand. If this sand is tapped at any point below the escarpment where the water enters, it will naturally rise in the well to a point level with the source at the base of the mountains. The Salt Creek Field and in fact all the plains country of Wyoming lies at a much lower elevation than the base of the mountains and this gives an artesian flow to water encountered in the Tensleep sand. The great depth that the sand lies under the surface off the structure brings it within a comparatively short distance of the subterranean heat in the earth and this accounts for the heat of the water. The Tensleep sand lies at such depths it would not be practical to drill wells to it except on structures where the structural formation brings the sand within reach of the drill.

The Standard Oil Co. of Indiana will hold a stockholders' meeting at Whiting, Ind., on March 4, at which it is expected the present plan for the employes to purchase stock will be continued for another period.

The Cane Creek well in the Moab district in Utah is still waiting to be drilled in. This well flowed several times and appeared to be a discovery well of a new field, then the flow was mudded off and a new derrick built to replace that burned. After waiting several weeks for tools, work was started cleaning out the hole. Now the casing has collapsed near the bottom and indefinite delay is in prospect.

The sand that is making the oil is the Goodridge sand of the Pennsylvania formation and not the Dakota of the lower Cretaceous. Not much datum is at hand on the Goodridge sands, but they are considered to be correlated with the Sundance, Embar and Tensleep sands of Wyoming, though the Sundance is Triassic and not Pennsylvanian. Geologist H. W. C. Prommel, in his report to the Utah Southern Oil Co., on the structures at Moab states: "The Lockhart Canyon and Indian Creek anticlines, the two southernmost of the four structures, bury the upper Pennsylvania, Mississippian and Devonian formations. On the Cane Creek and Shafer anticlines (the discovery well is on the Cane Creek) the Goodridge horizon has been exposed by erosion, but the lower Pennsylvania, Mississippian and Devonian beds remain to be tested."

The well was drilled jointly by the Midwest Refining Co. and the Utah Southern Oil Co. and after underreaming, the 10-inch casing was set at 2,025 feet and cemented. While drilling out the cement at the bottom of the casing, the collapse of the pipe occurred and now the drillers expect to try and swedge out the pipe and if that does not prove satisfactory, will pull the string and run another. The bottom of the casing is practically on top of the sand and when the strike was made, the bit was thought to be in the sand possibly a foot or a little more.

Oil Litigation

The Montana Supreme Court has made a decision clearing old leases on oil lands. Many leases taken during boom periods were considered to have expired automatically upon failure to drill. However, certain wordings in the lease form clouded the titles so that the subsequent leasers were uncertain as to their titles where the lease was not voided through the regular procedure. The Hager-Stevenson Oil Co. claimed its lease titles in some cases were clouded by former grants by the owners and a case was carried to the Supreme Court which affirmed the lower court's findings and gave an opinion that the former leases were void.

The Frantz Corp. has brought suit against the State Treasurer of Montana to recover taxes paid on royalties, under protest. The Frantz Corp. is not an active operator in Montana, deriving its income from royalties and was taxed on an income of $105,000. The company holds the taxes are paid by the producing company under the Montana net proceeds law. The Mid-Northern Oil Co., the Montana subsidiary of the Midwest Refining Co., has also filed suits designed to secure a Supreme Court decision on the payment of taxes under the net proceeds law. The Mid-Northern Oil Co. holds that the taxes should be paid on the royalties by the holders and not by the producer under the net proceeds law.

The Ohio Oil Co. drilled one of its old wells at Mahoney Dome, in the Lost Soldier Field, to the Sundance sand, on Section 31-26-28, and opened up a 44,000,000-foot gasser. This well had been producing in the Dakota for two years, making oil from the Dakota and the gas will probably be sold to the Producers & Refiners Corp. for the Casper-Lost Soldier gas line. The Ohio has a gas line from the Lost Soldier to Rawlins, supplying that city with gas and may also use the new well to supply this line. The Sundance sand was found at 3,000 feet.

The net earnings of the Argo Oil Co. for the nine months since its formation amounted to $450,988.52. It has a half interest in 5,200 acres in the new Moab district in Utah where the Midwest and Utah Southern have drilled the discovery well on Cane Creek structure and also some 950 acres in producing territory in the Caddo district in Louisiana. At a recent meeting the old board of directors was reelected.

Lost Soldier Producer

The well of the Prairie Oil & Gas Co. in the Lost Soldier Field, reported to have found oil in the Sundance sand, is holding up to a 15-bbl. hourly production. The well is on Section 11-26-90, and the Sundance sand was picked up at 2,040 feet. The oil is black, but has a comparatively high gravity. This adds another to the long list of productive sands in this field.

The Midwest Refining Co. reports two completions in the Salt Creek Field, one a Lakota sand producer, drilled for the Midwest Oil Co. on Section 23, which which came in with a natural flow of 543 bbls. The other completion was a second-sand well on Wyoming Oil Fields' holdings, in Section 25-40-79. This well was shot and put on the pump immediately.

The Teton Petroleum Co. brought in a second producing well on the west side of the Salt Creek Field. The well is in Section 33-40-79, not far from the shallow holes drilled years ago by the Wyokans Syndicate on this side of the field. First reports received in Casper are that the new well is making over 225 bbls. a day.

The Continental Oil Co. completed two wells in the Salt Creek Field. One was a 20-bbl. producer in Section 32-40-78, and the other a 70-bbl. well, same quarter, same section. No. 2 Brown, on the same lease, is in the sand, and should be completed this week.

The Texas Co.'s test on the Arminto structure, known as Wyland No. 1, is still drilling. The bit is thought to be in the bottom of the Dakota sand; if this is correct, the sand was over 100 feet in thickness at this point and carried only water. It is understood the test will be carried to the Lakota sand before abandoning. Total depth is 3,386 feet. This well found a gas pressure of several million feet in the upper sands.

Montana Gushers

Five completions are reported from the Kevin Sunburst Field in northern Montana, two assuming gusher proportions. The Homestake Exploration Co.'s No. 4 State, in Section 36-35-2, came in with a flow estimated at 2,500 to 3,000 bbls. Dakota-Montana Oil Co.'s No. 4 Emmons, in Section 31-35-1, is reported in with a 2,000-bbl. production. Both wells are in the gusher area on the east side of the field, which has produced some exceptionally large wells. The Ohio Oil Co.'s No. 7 Maughan came in with a 700-bbl. production, while the Sunburst Oil & Gas Co. reports a 50-bbl. well in Section 27-35-2. The California Syndicate completed a duster in Section 6-34-2.

Field Runs for Month of January

Salt Creek	1,825,210
Teapot	47,990
Big Muddy	102,850
Grass Creek	85,630
Elk Basin	19,830
Greybull	625
Rock River	93,040
Lance Creek	77,886

(Continued on Page 221)

News of Mexican Fields

By George Blardone
Mexican Bureau, The Oil and Gas Journal

TAMPICO, Mex., Feb. 12.—To apply the language of Holy Writ, according to St. Matthew, (13-12): "For whosoever hath, to him shall be given * * * *" consider the finished producing wells in Mexican Fields during the past week, when Mexican Petroleum Co. (Pan American Eastern), in its Chapacao sector of the Ebano Field has 35,000 bbls. potential flush production from two new wells with the remaining five pay completions of others totalling only 1,700 bbls.

Mexican Petroleum's best well of the week came in yesterday afternoon for 20,000 bbls. It is No. 56 Chapacao finished at 1,958 feet. Earlier in the week, No. 48 came in, rated 15,000 bbls. at the shallow depth of 1,528 feet.

The Marland interests, (Cia Pet. Franco Espanola), in the Marland Field, south and west of the Ebano, scored the two next best wells. Franco Espanola's No. 38 Limon is rated 600 bbls. at 1,764 feet; its No. 42 is rated 400 bbls. at 2,200 feet. Other northern fields pay completions follow: La Corona Petroleum Co's. No. 111 Piedras, in the old Panuco Field, is good for 300 bbls at 1,865 feet. Mexican Sinclair Petroleum Corp's. No. 17 Tananturo is good for 100 bbls at 1,900 feet.

In the South Fields, Mexican Siinclair Petroleum Corp's No. 15, Lot 226 Amatlan finished in the Tamasopa lime at 2,104 feet, good for 300 bbls.

The failures follow, all being the northern fields: La Corona Petroleum Co's. No. 177, Lot 4 Cacalilao drilled into salt water at 2,160 feet. In the Corcovado sector, La Corona's No. 19, Lot 6, is dry at 2,450 feet. International Petroleum Co's. No. 255, Lot 5 Cacalilao, and its No. 261 also, are each dry at 2,252 and 2,352 feet respectively. Mexican Sinclair Petroleum No. 89, Lot 3 Cacalilao drilled into salt water at 1,907 feet; and in the old Panuco Field its No. 9 Zurita is a dry hole at 2,037 feet. Transcontinental Petroleum Co's. Nos. 208 and 237 Lot 4 Cacalilao, are both failures around 2,100 feet. D. A. Williamson's No. 1 Perez (Tampuche) drilled into salt water at 2,296 feet. Head and others No. 3-A Piedras is a duster at 2,100 feet.

Up in the Ebano sector, Mexican Petroleum Co's. No. 15 Sand Pedro, is a duster at 2,370 feet; and this also applies to National Lines' No. 30 San Pedro, same sector, which finished dry at 2,530 feet.

In the Los Esteros, (State of Tamaulipas), American International Fuel Co's. No. 24, is a duster at 2,300 feet.

Summing up for the week the table shows 13 dry holes or failures, and seven producers.

Routine operations during the week were without special interest with few new tests spudding in.

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PAINTS VARNISHES ENAMELS LACQUERS

North Central Texas

By George R. Kelley

Upton and Crockett Counties attract attention with interesting and important tests being drilled. Test near World well, Crockett County, gives promise of being commercial producer. More wells completed during week with many districts showing activity since prices were increased.

FORT WORTH, Tex., Feb. 15.—Although nothing of a sensational nature has developed, Upton and Crockett Counties continue to hold the major interest of operators in North and Central Texas Oil Fields. So far it might be said that not a single commercial well has been completed in either of these counties, especially aside from the two of the Humble Oil & Refining Co. on the Powell ranch in Crockett County, yet practically all the wells being drilled in the vicinity of the Republic Production Co.'s No. 1 Baker, in Upton County have developed interesting showings at the proper depth, and at least two or three other wells in Crockett County are now showing for possible big production.

In Upton County, the No. 1 Union Land Co. of the Plateau Oil Co. which was reported more than a week ago as showing oil has been shot and put on the pump. On a 48-hour test the well pumped 165 bbls. of oil and 60 bbls. of water. There seems to be some doubt as to the source of water, some contending that it is coming from behind the casing. However, the well did not show any water before being shot and some believe that it is quite possible the well was shot into water.

In the same county, and about 1,000 feet east of the Republic's Baker well, the No. 1 A. S. Burleson of the Independent Oil & Gas Co. is now showing for a well. It has reached a depth of 2,191 feet, is making some gas and standing several hundred feet in oil. The well has been shut down several days waiting for a control head but this was installed Friday and drilling will likely continue at once. Operators generally seem to regard this well as one of the best prospects in the Baker wildcat district.

A Promising Prospect

Over in the World district of Crockett County, the No. 1 Powell of Carl Cromwell, formerly Wade and others, is showing up now as a producer. The hole is standing full of oil while drilling is being continued at a depth of 2,660 feet, only slightly lower than the pay was found in the World discovery well. The well was put on the swab and swabbed 70 bbls., lowering the column only about 900 feet from the top of the casing. This well is beginning to look like one of the foremost prospects in Crockett County.

Another Crockett County operation created some excitement this week when it encountered gas at a depth of 1,450 to 1,460 feet. This is No. 1 Noelke of Cosden and associates. The gas, however, proved to be noninflammable and at last reports drilling is being continued. No. 1 Todd, of Cook and others, which hit gas two weeks ago, took fire and destroyed the rig, has the derrick rebuilt and is scheduled to resume operations at once.

A slight extension seems to have been effected this week to the Oldham Pool, discovered recently by the Texhoma Oil & Refining Co., in Northern Archer County. No. 1 Wolf of Beasley and associates, a short distance west of any production in this pool is showing for a nice producer. The well has been swabbing at the rate of 100 bbls. a day from sand topped at 1,338 feet, and drilled to a total depth of 1,352 feet.

In Northeastern Coleman County, No. 1 Dibrell of Gwinnup and others, is now listed as a completion, making 100 bbls. at 1,881 feet. Since completion, however, the well is reported to be showing an increase. Latest reports are that the last 24-hour gauge was for 110 bbls. This well is reported to have a nice body of sand, variously reported from 12 to 15 feet and several new wells are to be started in that area at once. Among the companies that are slated to start new operations there immediately are the White Eagle Oil & Refining Co. and the Independent Oil & Gas Co.

Several wells in the new Kreeger Pool east of the town of Megargel in southwestern Archer County, are showing for good producers. Some of these have been reported as showing oil but so far none of them are completed. No. 1 Kreeger of the Consolidated Oil Co. is estimated good for 100 bbls. at 1,419 to 1,425 feet, and the No. 2 Keeger of the Prairie Oil & Gas Co. is estimated good for 100 bbls. also in sand at 1,419 to 1,422 feet. No. 1 Kreeger of the Roxana Petroleum Corp. is estimated making 75 bbls. daily from sand at 1,423 to 1,428 feet, and the No. 2 Kreeger of the Wampem Oil Corp. is swabbing at the rate of 200 bbls., having topped the sand at 1,415 feet and drilled 4 feet into it.

Other Producers

In Throckmorton County, No. 2 Stubblefield of the Humble Oil & Refining Co. is showing for a fairly good producer in the deep pay at a total depth of 3,241 feet. The pay was topped at 3,238 feet. The well is flowing by heads and making an estimated 130 bbls. daily.

In the North Brown County Field, the States Oil Corp. has encountered a big volume of gas in No. 1-A Allen. The well is making about 6,000,000 feet daily from a sand topped at 1,070 feet, and drilled into a total of 16 feet.

Production for the week ending February 11, showed practically no change from that of the previous week.

Week's Completions

This week shows a little better record for completions than the week previous. Following is the table of completions together with totals:

County—	Comp.	Prod.	Dry	Gas	New Prod.
Wichita	6	3	3	0	115
Wilbarger	16	14	2	0	1,970
Archer	33	17	16	0	965
Young	8	4	4	0	170
*Stephens	5	4	0	1	130
*Eastland	2	1	0	1	160
Brown	4	2	2	0	40
Reagan	2	2	0	0	660
Throckmorton	3	0	3	0	....
Callahan	2	0	2	0	....
Hutchinson	1	1	0	0	25
Baylor	2	1	1	0	15
Jack	1	1	0	0	75
Shackelford	1	0	1	0	....
Culberson	1	0	1	0	....
Coleman	1	1	0	0	100
Total	88	51	35	2	4,425
Last week	81	51	30	0	2,870
Difference	7	0	5	2	1,555

*Stephens County had one gas well making 3,000,000 feet of gas daily, and Eastland County had one gasser making a total of 5,000,000 feet daily.

PRODUCTION REPORT

Week ending February 12, 1926.

Burkburnett

Gulf Production Co.	475
Humble Oil & Refining Co.	370
Magnolia Petroleum Co.	2,675
Panhandle Refining Co.	235
Prairie Oil & Gas Co.	30
Sinclair Oil & Gas Co.	55
The Sun Oil Co.	70
The Texas Co.	380
Texhoma Oil & Refining Co.	500
Miscellaneous	7,600
Total	12,290

Electra

Empire Gas & Fuel Co.	930
Gulf Production Co.	910
Humble Oil & Refining Co.	110
Magnolia Petroleum Co.	3,175
Panhandle Refining Co.	40
Prairie Oil & Gas Co.	125
The Texas Co.	3,450
Texhoma Oil & Refining Co.	1,575
Miscellaneous	6,215
Total	16,530

Iowa Park

Gulf Production Co.	75
Humble Oil & Refining Co.	215
Magnolia Petroleum Co.	585
Panhandle Refining Co.	20
The Texas Co.	330
Texhoma Oil & Refining Co.	25
Miscellaneous	3,535
Total	4,785

Wilbarger County

Gulf Production Co.	45
Humble Oil & Refining Co.	3,890
Landreth Production Co.	3,935
Prairie Oil & Gas Co.	70
Miscellaneous	5,810
Total	13,750

Archer County

Empire Gas & Fuel Co.	945
Gulf Production Co.	2,275
Humble Oil & Refining Co.	550
Magnolia Petroleum Co.	1,780
Panhandle Refining Co.	140
Prairie Oil & Gas Co.	2,705
Sun Oil Co.	270
The Texas Co.	3,075
Texhoma Oil & Refining Co.	2,760
Miscellaneous	18,700
Total	33,200

Stephens County

Empire Gas & Fuel Co.	30
Gulf Production Co.	1,370
Humble Oil & Refining Co.	715
Magnolia Petroleum Co.	405
Mid-Kansas Oil & Gas Co.	1,365
Prairie Oil & Gas Co.	920
Sinclair Oil & Gas Co.	65
Sun Oil Co.	160
The Texas Co.	1,025
Texas Pacific Coal & Oil Co.	1,280
Miscellaneous	5,840
Total	13,175

Ranger

Gulf Production Co.	265
Humble Oil & Refining Co.	40
Magnolia Petroleum Co.	615
Mid-Kansas Oil & Gas Co.	165
Panhandle Refining Co.	135
Prairie Oil & Gas Co.	635
The Texas Co.	140
Sinclair Oil & Gas Co.	315
Texas Pacific Coal & Oil Co.	760
Miscellaneous	2,615
Total	5,685

Moran

Empire Gas & Fuel Co.	30
Humble Oil & Refining Co.	10
Prairie Oil & Gas Co.	10
The Texas Co.	265
Texhoma Oil & Refining Co.	90
Miscellaneous	1,875
Total	2,280

Young County

Gulf Production Co.	170
Humble Oil & Refining Co.	400
Magnolia Petroleum Co.	230
Mid-Kansas Oil & Gas Co.	15
Panhandle Refining Co.	160
Prairie Oil & Gas Co.	10
Sinclair Oil & Gas Co.	375
Sun Oil Co.	60
The Texas Co.	590
Texhoma Oil & Refining Co.	455
Miscellaneous	6,100
Total	8,565

Eastland-Comanche

Empire Gas & Fuel Co.	10
Humble Oil & Refining Co.	150
Magnolia Petroleum Co.	685
Mid-Kansas Oil & Gas Co.	175
Prairie Oil & Gas Co.	130
Sinclair Oil & Gas Co.	25
The Texas Co.	125
Texas Pacific Coal & Oil Co.	110
Miscellaneous	1,400
Total	2,810

Panhandle Refining

Hutchinson County	3,000
Carson County	1,875
Gray County	145
Wheeler County	90
Potter County	20
Total	5,130

Miscellaneous Pools

Clay	430
Montague	1,025
Jack	25
Throckmorton	145
Baylor	245
Palo Pinto	450
Brown	2,315
Coleman	315
Callahan	5,050
Reagan	2,805
Reagan	31,010
Scurry	50
Crockett	45
Total	43,910
Total this week	162,110
Total last week	162,150
Loss	40

Wichita County Completions

Texhoma Oil & Refining Co.'s No. 2 Bentley, dry at 1,502 feet; Underwood Drilling Co.'s No. 1 Fassett, dry at 1,805 feet; Biggs Oil Co.'s No. 13 Fisher, dry at 1,610 feet; Bullington and others' No. 13 Jennings, 100 bbls. at 1,622 feet; Culbertson Co.'s No. 34 Waggoner Bros., 10 bbls. at 1,525 feet; Patterson and others' No. 5 Fisher, 5 bbls. at 1,592 feet.

Wilbarger County

Barkley and others' No. 4-B Stephens, 50 bbls. at 2,380 feet; Humble Oil & Refining Co.'s No. 38 Stephens, 160 bbls. at 2,388 feet; Humble Oil & Refining Co.'s No. 3-I Waggoner, 75 bbls. at 1,899 feet; No. 1-K Waggoner, 65 bbls. at 2,363 feet; No. 1-M Waggoner, 65 bbls. at 1,904 feet; Kolp and others' No. 10-A Waggoner, 5 bbls. at 2,002 feet; Landreth Production Co.'s No. 4-A Waggoner, 210 bbls. at 1,860 feet; No. 4-F Waggoner, 150 bbls. at 1,927 feet; McCamey and others' No. 26 Stephens, 520 bbls. at 2,320 feet; Magnolia Petroleum Co.'s No. 70 H. & T. C., dry at 2,055 feet; No. 1 Jiggs-Waggoner, dry at 2,703 feet; Ray and others' No. 8 Bond, 20 bbls. at 2,046 feet; Roxana Petroleum Corp.'s No. 2-A Waggoner, 100 bbls. at 2,437 feet; No. 3-A Waggoner, 380 bbls. at 1,926 feet; Sloan and others' No. 1 Waggoner, 70 bbls. at 2,425 feet; The Texas Co.'s No. 1 Dill, 100 bbls. at 2,395 feet.

Archer County

Burns and others' No. 4 Brown, 100 bbls. at 1,585 feet; Cullum and others' No. 1 Mangold, dry at 1,850 feet; Hazlett and others' No. 1 Hutcherson, dry at 1,515 feet; Humble Oil & Refining Co.'s No. 5 Wilson, 5 bbls. at 1,392 feet; Looney and others' No. 1 Plowman, dry at 1,050 feet; Maxson and others' No. 5 Wilson, dry at 1,480 feet; Pandem Oil Corp.'s No. 4 Hutcherson, 100 bbls. at 1,392 feet; No. 5 Hutcherson, 90 bbls. at 1,401 feet; Phillips Petroleum Co.'s No. 91 White, dry at 1,648 feet; Waite Phillips and others' No. 38 Wilson, 45 bbls. at 1,528 feet; Shappell Oil Co.'s No. 38 Jackson, 60 bbls. at 1,807 feet; Staley and others' No. 2-A Parrish, 110 bbls. at 1,586 feet; The Texas Co.'s No. 1 Dycus, dry at 1,821 feet; White Eagle Oil & Refining Co.'s No. 1 Marcell, dry at 1,634 feet; Atlantic Oil Production Co.'s No. 1 Andrews, dry at 1,002 feet; Bass and others' No. 7 Darilek, 100 bbls. at 1,429 feet; Consolidated Oil Co.'s No. 1 Feldhauser, dry at 1,503 feet; Hammond and others' No. 1 Oldhom, 115 bbls. at 1,376 feet; Harris and others' No. 1 Trinity Townsite Co., 50 bbls. at 1,410 feet; Logan and others' No. 1 Logan, dry at 1,410 feet; Magnolia Petroleum Co.'s No. 6 Portwood, 10 bbls. at 1,423 feet; No. 5-B Stampfli, 10 bbls. at 1,376 feet; Multiple Oil Co.'s No. 11 Hamilton, dry at 1,245 feet; Murchison and others' No. 1 Neimeyer, dry at 1,501 feet; Perkins and others' No. 10 Anderson, dry at 1,447 feet; Phillips Petroleum Co.'s No. 3 Falls County, dry at 1,220 feet; Waite Phillips' No. 1 Lowe, 5 bbls. at 1,213 feet; Read and others' No. 7 Andrews, dry at 1,083 feet; Republic Production Co.'s No. 1 Oldhom, 65 bbls. at 1,043 feet; Simms Oil Co.'s No. 3 Richardson, 10 bbls. of water and 30 bbls. of oil at 1,454 feet; The Texas Co.'s No. 17 Hill, 60 bbls. at 1,392 feet; Texhoma Oil & Refining Co.'s No. 10

(Continued on Page 231)

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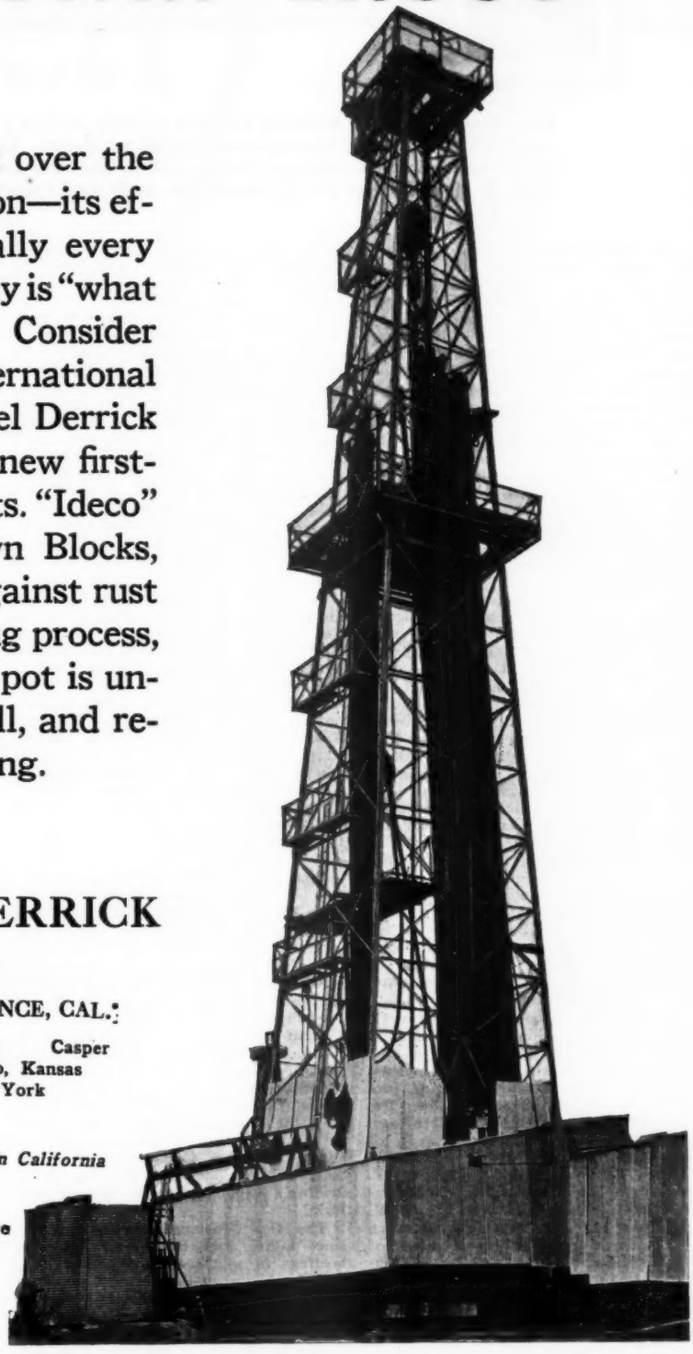

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INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)

Pennsylvania-West Virginia

By D. S. Wakenight

Hope Construction & Refining Co. gets 115-bbl. well in Licking County, Ohio, and W. W. and H. E. Montgomery 75-bbl. producer. Graystone Oil Co. and Ohio Fuel Supply Co. each get 50-bbl. well in Hocking County. Manufacturers Light & Heat Co. has 35-bbl. completion in Wetzel County, West Virginia.

PITTSBURGH, Pa., Feb. 15.—Since the eastern fields were last reviewed little out of the ordinary has occurred, certainly nothing of any great importance. The heavy fall of snow still remains and additional snow and rain has made it burdensome to keep drilling wells going and starting new work. Operators claim they have never experienced more severe weather than has prevailed since the new year.

Few completions were recorded and just a few above the average in size. As usual, the deep sand territory in southeastern Ohio furnished all the worthwhile wells. Most of the wells completed are in this territory, the shallow sand operators having made no preparation for extremely cold weather had to suspend operations.

In Section 15, Hanover Township, Licking County, the Hope Construction & Refining Co. has completed and shot in the Clinton sand No. 13 on the Jacob Vandenvender farm. The well was completed at a total depth of 3,000 feet and the first 24 hours after shot produced 115 bbls. In Section 2, Franklin Township, Licking County, the Ohio Fuel Supply Co. has completed in the Berea grit a test on the E. J. Kelley farm. It is a gasser good for 1,800,000 feet.

In the southeast quarter of Section 18, Hopewell Township, Licking County, the Pure Oil Co. has drilled its test on the J. D. Morehead farm through the Clinton sand and a light showing of oil. It may make a very small pumper. In Lot 23, Newton Township, the Ohio Fuel Supply Co. has drilled a test on the Frank Dush farm through the Berea grit and dry. It will be drilled through the Big Lime formation and the Clinton sand.

Producer in Hocking

In the southeast quarter of Section 11, Washington Township, Hocking County, the Graystone Oil Co.'s No. 3 on the George Miller farm is reported completed and shot in the Clinton sand and produced 50 bbls. the first 24 hours. The loction is 900 feet southwest of the second test on this farm.

In the east quarter of Section 12, Jackson Township, Noble County, G. W. Ogle & Co. have completed in the Macksburg 500-foot sand No. 25 on the G. W. Ogle farm, not good for more than two bbls. a day. In the southeast corner of Section 12, Newport Township, Washington County, the Brown Oil Co. completed and shot in the Berea grit No. 8 on the Brown heirs' farm, a light pumper. In the sme section and township, O. S. Reckard & Co. are due in the sand at No. 12 on the F. F. Dana farm. In Section 53, Salem Township, Charles Hoffman & Co. have an 8-bbl. pumper on the W. L. Schramm farm. In the same section, W. C. Patterson & Co. are drilling another test on the George Schmidt farm.

Licking County Well

In Section 7, Hanover Township, Licking County, W. W. and H. E. Montgomery drilled through and shot in the Clinton sand a test on the W. W. and H. E. Montgomery farm. The well produced 75 bbls. the first 24 hours. When first drilled in it showed for a very light pumper. In the northeast quarter of Section 11, Washington Township, Hocking County, the Ohio Fuel Supply Co. drilled through and shot in the same formation, a test on the O. C. Harden farm. The location is 900 feet east of the Graystone Oil Co.'s second test on the George Miller heirs' farm and showing for a 50-bbl. producer.

In Hardy Township, Holmes County, Section 9, the East Ohio Gas Co.'s No. 5 on the J. R. Forgy farm is good for 30 bbls. in the Clinton sand. In the northeast quarter of Section 5, Ward Township, Hocking County, the Sunday Creek Coal Co. has completed in the Clinton sand No. 134 on its own property and it is a duster. The Clinton sand in this well was found broken from top to bottom and contained no oil. In the Fisher Pool, Alexander Township, Athens County, the Townsend Oil & Gas Co.'s No. 5 on the Sarah E. Penrod farm is good for 15 bbls. a day in the Berea grit.

In Section 30, Washington Township, Hocking County, the Ohio Fall Oil & Gas Co. has a 5-bbl. pumper at a test on the H. H. and J. Spurrier farm. In Section 14, Monroe Township, Holmes County, the Empire Gas & Fuel Co. has a 10-bbl. pumper at No. 3 on the E. E. Connor farm. In Section 17, Westland Township, Guernsey County, the Eastern Carbon Black Co.'s test on the Charles Burris farm is dry and abandoned. In Franklin Township, Licking County, Glass & Hazlett have a 3-bbl. pumper in the Berea grit at a test on the Austin Orr farm. In Hanover Township, W. W. and A. T. Wehrle have a duster at No. 1 on the Florence Fleming farm.

Starting New Work

In Section 25, Coal Township, Perry County, the Kachelmacher estate has started to drill a second test on the Hemlock Coal Co. property. In Section 23, Washington Township, Hocking County, the Twin Hills Oil & Gas Co. has started to drill on the W. S. Lane farm. The Cottrill Oil & Gas Co. has a rig up on the J. C. Cottrill farm. In Starr Township, the Eureka Oil & Gas Co. has the rig completed on the O. L. Hutchinson farm. In Section 23, Killbuck Township, the East Ohio Gas Co. has started to drill on the A. N. Graham farm. In Clarke Township, Coshocton County, the East Ohio Producing & Refining Co. is drilling a second test on the Kohn Conkle farm.

The Hope Construction & Refining Co., since taking over the Carter Oil Co.'s holdings in southeastern Ohio, is doing considerable work in the deep sand territory in southeastern Ohio. In Section 23, Hopewell Township, the rig has been completed for a test on the James Uffner farm. In Section 17, Madison Township, Perry County, the same company has the rig completed for a test on the J. McCullough farm. In Section 1, same township, Edmond & Haynes Brothers have the rig completed for another test on the J. W. Neibarger farm. In Rush Creek Township, Fairfield County, the Ohio Fuel Supply Co. has a rig up on the C. C. Buren farm. In Richland Township, the same company is drilling on the S. S. Turner farm. In Section 28, the Combs Oil & Gas Co. is due in the Clinton sand on the C. R. Bradford farm. The Planet Oil Co. has a rig up on the O. J. Miller farm.

A 35-bbl. producer was the best the West Virginia fields had to offer at the close of the week. In Center district, Wetzel County, the Manufacturers Light & Heat Co.'s No. 3 on the Patrick Clark farm is good for 35 bbls. a day in the Gordon sand. In Liberty district, Marshall County, the same company's test on the J. D. and M. Myers farm, drilled deeper, is a gasser in the Gordon sand.

In West Union district, Doddridge County, the Clifton Oil & Gas Co.'s No. 19 on the Joseph Freeman farm is a light pumper in the Big Injun sand. The Hope Natural Gas Co.'s test on the S. P. Beall farm is a gasser in the same formation. On Green Creek, Harper district, Roane County, the Green Creek Oil & Gas Co. has the rig completed for a second test on the William Fields farm.

The southwest Pennsylvania fields reported no completions at the close of the week.

Fair Well in Clay County

In the new Big Injun sand development in Henry district, Clay County, the Ohio Fuel Oil Co. has drilled No. 6 on the J. C. Casto farm into the Big Injun sand and showing for a 25-bbl. producer. The location is 600 feet west of the second test on this farm. In Center district, Calhoun County, the Hope Natural Gas Co.'s test on the A. G. Matthews farm is a gasser in the Big Injun sand.

In Center district, Gilmer County, McCall & Co. have a gasser in the Big Injun sand at a test on the Anthony H. Moore farm. In DeKalb district, E. E. Ellis & Co. drilled their old No. 1 on the W. J. Fling farm deeper and found nothing. It has been abandoned.

Ritchie County

In Grant district, Ritchie County, the Goose Creek Oil & Gas Co. has an 8-bbl. pumper in the Big Injun sand at No. 7 on the Newbrough farm. In Union district, the Carnegie Natural Gas Co. has gassers in the Big Injun sand at a test on the J. T. Oliver heirs' and a second test on the A. B. Kelly farms. In southwest district, Doddridge County, Lee Boyce & Co. have a gasser in the Big Injun sand at a test on the John Broadwater farm.

Calhoun County

On Steer Creek, Sherman district, Calhoun County, the Hope Natural Gas Co. has completed in the Big Injun sand a test on the Louis Vanoy farm. It is a gasser good for 100,000 feet. On the same stream, Center district, Gilmer County, the same company completed in the Berea grit a test on the J. R. Simmons farm, a duster. In Smithfield district, Roane County, Douglass Brothers have completed in the Big Injun sand their test on the P. C. Adams farm good for 3 bbls. a day.

Lincoln County

In Union district, Lincoln County, the Grant Gas Co. has completed in the Berea grit a test on the Thomas Stanley farm. It is a gasser. In Carroll district, the W. C. Kingrey Gas Co. has completed in the same formation No. 4 on the Lincoln County Poor farm. It is a gasser. In Sheridan district, the Foote Oil & Gas Co.'s test on the June Black farm is a gasser.

In the Goose Creek Pool, Grant district, Ritchie County, the Adams Oil Co. completed in the Big Injun sand No. 3 on the James Newbrough farm of 72 acres. The well is probably good for 10 bbls. a day. In the same district, Mahaney & Lucas have the rig completed for a test on the A. Carmichael farm. The Penn Royal Oil Co. has a rig up on the C. Lowther farm. In Murphy district, Bickerstaff and others are drilling a test on the F. V. Mitchell farm.

In Union district, Ritchie County, the Hope Natural Gas Co.'s tests on the William Jett and R. C. Bee farms are gassers in the Big Injun and Maxon sand. In Union district, the Carnegie Natural Gas Co. is due in the sand on the A. L. Riggs farm and has started to drill a second test on the A. I. Kelly farm. The Pittsburgh & West Virginia Gas Co. is due in the Big Injun sand at a test on the W. D. Zinn farm. The same company has a gasser in the Big Injun sand at a test on the R. A. Thomas farm.

Rovers Run Wildcat

Latest reports from the Rovers Run Oil & Gas Co.'s test on Rovers Run, Warren district, Upshur County, state that its status as an oil producer has not yet been determined. Owing to it being a wildcat only a limited amount of tankage had been provided. The first two days after it was drilled into the Gordon sand pay they bailed 150 bbls. and then discontinued bailing to erect additional tankage. No provision has yet been made for marketing the oil. The Eureka Pipe Line Co.'s nearest line is 15 miles distant and the B. & O. R. R. 4 miles and nearest point 3 miles west of Buchannon. The well is on the Morgan Lewis farm and from its showing is estimated to be good for 20 or 25 bbls. a day. After they discontinued bailing the hole filled up 1,800 feet with fluid. As previously stated, the well may prove to be the forerunner of a new Gordon sand pool or it may only be a "freak."

Salt Sand Producer

On Poplar Fork, Scott Township, Putnam County, operators are still getting an occasional producer. Located 700 feet northeast of the test on the A. B. Griffith farm the Teays Producing Co. has drilled a test on the Fannie Simmons farm through the salt sand good for 18 bbls. a day. The test on the S. B. Griffth farm is a 10-bbl. pumper in the salt sand. This and the test on the Simmons farm makes it look good for additional producers in that vicinity. In Sheridan district, Lincoln County, the Foote Oil & Gas Co. has completed a gasser in the Berea grit at a test on the Lee Lawson farm.

Ritchie County Tests

In Union district, Ritchie County, the Carnegie Natural Gas Co. has started to drill a test on the H. Lee Batson heirs' farm. In Murphy district, Hayes & Roberts have started to drill a second test on the Wilson Brothers farm. In Walker district, Wood County, Jonas & Parks are rigging up at a second test on the John Lenhart farm. In the same district, Hebrick-Rapp farm. The Aizpurin Oil & Gas Co. is drilling at 1,500 feet on the A. J. Lodge farm, in Simpson district, Harrison County. In Union district, Lincoln County, C. C. Wolf has a rig up on the George Harden farm and the United Fuel Gas Co. has a rig up on the Scott Dingess farm. The Union Gas & Oil Co. is drilling on the G. F. Porter and Charles Richmond farm. In Sheridan district, the Transylvania Petroleum Co. is due in the sand on the E. N. Adkins farm.

In Liberty district, Marshall County, the Hope Construction & Refining Co. is rigging up on the C. E. Yeater farm. The same company is building a rig on the D. A. Fair farm. In McElroy district, Tyler County, the Wiser Oil Co. is due in the Big Injun sand on the John Mason farm. In Union district, the Reno Oil Co. is still fishing on the Rachel Hissam farm. Trainer & Travis have started to drill No. 4 on the Thomas Pearcy heirs' farm, in New Milton district, Doddridge County. In Ten-Mile district, Harrison County, Lyons & Burke have shut down at 1,590 feet on the W. T. Williams farm. In Union district, the Reserve Gas Co. is still fishing for casing at its deep test on the Chapman Smith farm.

Testing Wayne County

Wayne County is undergoing a more thorough test than at any time in the past. The county is in the trend of pro-

(Continued on Page 156-B)

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Fields of the Central West

By Whit

Catawba Oil & Gas Co. well on Catawba Island, deepest Trenton Rock in Lima Field, makes 60 bbls. first 24 hours and 30 bbls. second. Baseline Oil Co. gets 30-bbl. producer in Findlay Field. George Miller strikes oil mile beyond production in Allendale Field.

FINDLAY, Ohio, Feb. 15.—Only 17 completions were reported for the seven-day period in the division of the Central West Field north of the Ohio River comprising the Lima, Central Ohio, Indiana and Illinois Fields. The only one of the four divisions that failed to report a well was the Indiana area. The slackness in work is due to the worst weather of the winter.

Both the Lima Field and Wabash County of Illinois report a sensational strike each, although the wells are not large but are important as to locations. The Lima Field well was drilled on Catawba Island while the one in Illinois was in advance of production in Wabash Township, Wabash County, Illinois.

The week's figures of new completions show that the Lima Field had 9 new completions, with a flush of 208 bbls.; Illinois, four wells, three dry and 2 bbls.; while the Central Ohio fields reported four new wells, one dry and three gas.

With the coming of better conditions or improvements in weather and roads, a great amount of development is expected to start as all lease owners that have undrilled locations are anxious to get busy and connect additional wells to their power plants otherwise their production will dwindle and it is a foregone conclusion that lease owners must keep adding a fresh producer now and then to maintain their average production.

Lima Field

The sensation of the Lima Field for the week was the bringing in of a well by the Catawba Oil & Gas Co., formerly reported as the Underwood Oil & Gas Co., on the northeast corner of the John Laudy farm, in the northeast quarter of Section 25, Catawba Township, Ottawa County, and between Port Clinton and Marblehead, almost to the extreme end of the county and not far removed from Sandusky Bay or Lake Erie, something like 20 miles east of the old development of the Trenton Rock or Lima Field. Top of Trenton in this test was topped at 1,884 feet and drilled 106 feet in to a total depth of 1,990 feet, being the deepest Trenton Rock well in the Lima Field. When connected to tank the well put in 60 bbls. the first 24 hours and 30 bbls. during the next 24 hours, and with the other producer on the same island it looks very much as though a new and important pool had been opened up. The new find has encouraged operators to such an extent that there is talk of the drilling of a number of tests between the Trenton Rock Field proper and the Catawba wells. It is currently reported that the Catawba wells look good enough so that the Buckeye Pipe Line Co. will lay a line from the wells to the hamlet of Gypsum, on the New York Central Railroad (Sandusky Division) where storage will be installed as well as a loading rack. This will give a ready market for the crude and encourage more active development of the prospective field. The same company has arranged to start another test which will be on the Byrne-Neal land also on Catawba Island.

Findlay Field

Some dozen or more years ago it was thought the Findlay Field of Hancock County had been thoroughly drilled over, but some excellent producers are being brought in from time to time in out-of-the-way places where least expected. Liberty Township is showing some excellent wells of late and with better weather should show an increased development. This new producing area is some few miles to the southwest of Findlay and between that city and Lima. The best of the four completions reported from Liberty Township, is the Baseline Oil Co.'s No. 1 in the northwest corner of the Dan Bish farm, in the northwest quarter of Section 32, Liberty Township. Top of Trenton was found at 1,286 feet and drilled to a total depth of 1,337 feet. Same company's No. 4 in the southwest corner of the C. Hoffman farm, mapped as the Daniel Croft farm, in the southwest quarter of Section 33, same township, pumped 25 bbls., with sand tapped at 1,315 feet and 75 feet in the sand. The Bish well showed 30 bbls. under the pump.

Star & Clark's No. 4 well, 200 feet from the south line and 1,000 from the west line of the Jane Wheeler, mapped as the David Bish farm, in the southeast quarter of Section 32, Liberty Township, Hancock County, pumped 25 bbls. flush with sand topped at 1,319 feet and drilled to a total depth of 1,400 feet or 81 feet in the Trenton. The West End Oil Co.'s test in the northeast corner of the A. Filtz farm, in the northwest quarter of Section 31, same township, pumped 25 bbls. Trenton was struck at 1,280 feet and drilled 60 feet in the sand. This well extends the producing area one location. The average size of the four new wells makes the territory look very inviting and there is no doubt that there are many other spots in Hancock County that will prove just as productive.

In Eagle Township, Hancock County. R. T. Rittenhouse's second test, 200 feet from the south line and 600 from the east line of the Frank Freed farm, mapped as the Peter N. Foltz farm, in the northwest quarter of Section 6, struck top of Trenton at 1,311 feet and oil at 75 feet in, with a flush of 10 bbls. from a total depth of 1,386 feet.

The Jenera Oil & Gas Co.'s No. 3 well, 600 feet from the south and west lines of the Edward Boutwell farm, mapped as the Rebecca Boutwell farm, in the southeast quarter of Section 14, Orange Township, Hancock County, only pumped 2 bbls. the first 24 hours. Top of sand at 1,313 feet and drilled to a total depth of 1,371 feet.

Wood and Sandusky Counties

In the southwestern part of Plain Township, Wood County, and southwest of Bowling Green, Dave Eckler, a well-known operator of Toledo, has drilled in his No. 34 well, located 640 feet from the south line and 240 from the west line of the L. H. Kramer farm, mapped as the R. C. Minear farm, in the southeast quarter of Section 34. It is reported to have pumped 15 bbls. the first 24 hours. Sand was tapped at 1,324 feet and drilled 272 feet in the Trenton to a total depth of 1,596 feet. This well is in among old wells that were drilled in the 90s and shows conclusively there is still oil to be produced within the old defined areas, and that deeper drilling in the sand eventually gets it.

A fair well is found now and then in the old Sandusky County Field, that in the early days produced some wonderfully large producers. Probably the largest well ever found in that County was that drilled by T. E. and J. N. Kirkbride on the Ben Jones farm, in Madison Township, 4 miles west and one mile south of Gibsonburg. This well was drilled in on November 15, 1894, and a vast battery of tanks were installed at once with several lines connected to pipe line to take care of the crude. This monster was credited with a production of 20,000 bbls. the first 24 hours, and was the second largest gusher ever developed in the Trenton Rock Field. For the first 30 days the well was credited with an average daily production of better than 7,000 bbls. a day and it made a snug fortune for its owners. North Lima crude at that time was bringing around 50 cents per bbl. at the wells. No other large producer was found in the immediate vicinity of the gusher, which was a crevice well.

The Ohio Oil Co. has drilled in No. 3 in the northwest corner of the Henry Kinker farm, in the northeast quarter of Section 30, Washington Township, Sandusky County, with a flush of 16 bbls. Sand was struck at 1,266 feet and drilled 100 feet in the sand.

The $500,000 company recently organized at Lima, Ohio, with Mack P. Colt as president, has acquired some property in the Dunbridge Field of Wood County, with settled production and a nice undeveloped acreage and is planning to start active development as soon as the roads dry.

Central Ohio

Many of the new operations in the Central Ohio Field are shut down, waiting for better weather before resuming work. No. 3 of the Empire Gas & Fuel Co., in the northeast corner of the Elmer E. Connor 100-acre farm, Lot 14, Monroe Township, Holmes County, reported a duster, has been given a shot and is now estimated as good for 10 bbls.

In Cannan Township, Wayne County, Arthur & Mills' second test, 225 feet from the north line and 1,365 from the west line of the J. Brinkerhoff farm, in the southwest quarter of Lot 30, is estimated as good for 221,360 feet of gas at a depth of 3,300 feet, which is the Clinton lime formation.

In Prairie Township, Holmes County, the Empire Gas & Fuel Co. struck a nice gas well in the northwest corner of the W. S. and E. Baker 127 acres, Section 16.

The Ohio Oil Co.'s test, 330 feet from the north line and 660 from the east line of the Robert and Carey Reed 100 acres, Lot 22, Kilbuck Township, Holmes County, is reported to have shown a volume of 1,500,000 feet of gas. In the same township, the East Ohio Gas Co.'s test in the southwest corner of the Alvin W. Graham 20 acres, Lot 23, is reported a duster.

Illinois Field

Inclement weather conditions have held back development work in the Allendale Field of Wabash County, Illinois, and operators anxious to get their wells into the pay sand appear to be somewhat discouraged. There are at least more than 20 wells in the productive Stillwater Pool

(Continued on page 202)

Kentucky-Tennessee

By Vern T. Whitney

WINCHESTER, Ky., Feb. 15.—The recent increase in the price of crude oil in the districts covered by the Indian Pipe Line Corp. in the western division of Kentucky will stimulate drilling activity as soon as the roads are dry enough to move material. This is the first ray of sunshine the operators have had for seven months. Development has been at low ebb in all parts of Kentucky since early last fall, but as soon as conditions improve work will start with possibilities of a good year.

The real feature of the week comes from the Owensboro district of the western division, with a well reported far above the average producer for that area. It was drilled by the Chicago Petroleum Syndicate on the Gunther-Gant acreage, in Ohio County, and is reported showing for 125 bbls., although no accurate gauge has been taken, merely an estimate.

Western Division

One of the best wells of the week in the Kentucky area was found in the western division on the Gunther-Gant farm, a short distance southeast of the Colonel Powers farm, in Ohio County and south of Whitesville, in the Owensboro district. The well was drilled by Contractor John Riegel for the Chicago Petroleum Syndicate, a subsidiary of the Palmer Brothers, well known wildcatters of Chicago. This is the second attempt to find oil on the Gunther-Gant lease, but the first proved a duster. No. 2 was given a 135-quart shot—the largest quantity of nitroglycerin ever used in the Owensboro area. Oil was struck in the Barlow sand at about 750 feet, and those that witnessed the shooting said the preliminary indications are for one of the best producers in the territory. One experienced oil man estimated an initial production of 125 bbls., but when allowed to show its worth, more will be known of what it actually will produce. This well, coming after several dry holes had been drilled, puts new interest in the field and shows that the Powers Pool extends over a larger territory than heretofore examined.

Week's Work

The same number of completions, same number of producers, two less dry holes, two additional gas wells and an increase of 75 bbls. in initial production is the record made in the Kentucky-Tennessee Field during the past week. The completions were fairly well scattered, the largest number of new completions in any one county being three. The wells were distributed by counties as follows:

County—	Comp.	Prod. Wells	Prd.	Dry	Gas
Barren	3	2	15	1	0
Johnson-Magoffin	3	2	7	0	1
Warren	2	2	30	0	0
Lawrence-Johnson	2	2	10	0	0
Owensboro	2	2	128	1	0
Estill	2	2	8	0	0
Allen	2	2	6	0	0
Floyd	2	0	0	0	2
Wayne	1	1	12	0	0
Wolfe	1	1	10	0	0
Elliott	1	1	10	0	0
Lee-Owsley	1	1	3	0	0
Tennessee	2	0	0	2	0
Total	25	18	239	4	3
Last week	25	18	164	6	1
Difference	0	0	75	2	2

Owensboro District

Outside of the Gunther-Gant well, two new completions were reported from the Owensboro district. In the Midkiff Pool, the Petroleum Exploration Co.'s test on the Henry Gour 187 acres, developed into a duster and abandoned at 796 feet. The Leeper Oil Co.'s No. 1 on the Amanda Stewart and 400 feet north of No. 5, same lease, is reported as a 3-bbl. well in the Jett sand.

The Greasy Creek Oil Co. is drilling

(Continued on page 198)

Revolutionizing swabbing!

Many distinctive features found in no other swab are embodied in the Simplex. It is inherently stronger and more efficient. Threaded joints are eliminated. Overloading is eliminated—The swab can be run in faster and will lift the exact amount of fluid desired. It performs the service of 3 tools—it swabs, it agitates and it cleans. It can also be used for pumping. The tight, even closure of the patented rubber maintains a secure seal. From the standpoint of durability the Simplex outwears other swabs 50% to 100%. Furthermore it reduces the cost of swabbing equipment 50% because two master sizes can be used for all casing sizes by changing rubbers.

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Simplex Super-Swab

MEN KNOWN IN OILDOM

—Photo by Gruber.

A. W. Scott

A. W. Scott, secretary and treasurer of the Empire Oil & Grease Company, Oil City, Pa., is a man who has come rapidly to the front during recent years in Pennsylvania marketing circles. Due to his efforts the Empire Oil & Grease Co. has not only prospered as a jobbing concern but has also added a string of heavily patronized filling stations in the Oil City-Franklin-Clarion district.

Mr. Scott was born in Oil City. He is a graduate of the Oil City High School and gained his practical service with the Empire, starting as an office boy and gradually working his way up as general clerk, bookkeeper, etc., to his present position. He has now been with the company for 15 years.

Mr. Scott's hobby is volley ball and he is a member of the Oil City team which generally secures second place in Pennsylvania volley ball circles.

PERSONAL PARAGRAPHS

E. L. Doheny is expected to arrive in Los Angeles from New York following a hasty trip East on business.

* * *

Hoyle Jones, president of the Superior Tube Company, has been making a business trip in the Rocky Mountain area.

* * *

E. J. Sullivan, president of the E. T. Williams Oil Company, has been in Omaha, Neb., on business for his company.

* * *

Mr. and Mrs. J. P. Flannigan of Tulsa have arrived from Europe on the Aquitania after spending the winter months on the Continent.

* * *

A. J. Hardendorf of Casper, Wyo., reports considerable activity in the Panhandle section of Texas which he visited recently.

* * *

W. A. Jackman, drop forged steel specialist of the Henry Vogt Machine Company of Louisville, Ky., is on a business trip through the Mid-Continent oil fields.

* * *

J. C. Lindsay of Casper, Wyo., is located temporarily in Shreveport, La., in charge of the Argo Oil Company's operations in the new Marion County Field.

* * *

J. R. Munce of Pittsburgh, Pa., president of the Arkansas Natural Gas Company, is spending several weeks in Shreveport, La., on business for the company.

Harry R. Boughner of Tulsa, Okla., who represents the Oil Conservation Engineering Company of Coffeyville, Kans., is touring the Texas oil fields.

* * *

F. H. Dickison, first vice president of the Tide Water Sales Corporation, is leaving Los Angeles for New York following his fourth annual visit to California.

* * *

Joe T. King, president of the Kingwood Oil Company of Okmulgee, has returned from a 10 days' vacation spent at Hot Springs, Ark. He was accompanied by Mrs. King.

* * *

G. H. Dillon of the New York offices of the Bethlehem Shipbuilding Corporation, Ltd., spent several days recently visiting Mid-Continent refineries. He returned to New York last week.

* * *

A. G. Scherbel, secretary-treasurer of the Western Oil & Refining Company, Los Angeles, is en route to New York to consummate a deal looking for disposal of the company's products abroad.

* * *

A. W. Peake, general superintendent of operations for the Midwest Refining Company at Casper, is in the East on a business trip which will take him to Chicago, Washington and other points.

* * *

Russell Forbes has resigned as assistant secretary of the National Association of Purchasing Agents to reenter Columbia University at New York. He has been associated with the organization for three years.

* * *

E. H. Bosches of Houston, Tex., Mid-Continent manager of sales of the South Chester Tube Company, who has been spending the past three weeks in Oklahoma and Kansas territory, has returned to his Houston office.

* * *

T. T. Gray, president of the Gray Processes Corporation, returned to the home offices of the company last week after a several weeks' visit to western points. A. McD. Gray, who accompanied him, remained in Tulsa.

* * *

Hugo Hoevel, division manager of the Cities Service Oil Company, with headquarters in Tulsa, was called to Fort Worth last week for the purpose of conferring with L. G. Coleman, general manager of the Cities Service Oil Company.

* * *

A. L. Guiberson, Jr., of the Guiberson Corporation, has left Los Angeles for New York but will stop off in Dallas, Tex., where he will spend a few days in the office of the company. Mr. Guiberson will be gone about three weeks.

* * *

C. J. Anderson of the Oil Well Supply Company arrived in London recently. He has recently visited all oil fields in South America and British West Indies. Mr. Anderson is a recognized authority on rotary drilling methods as well as cable tools.

* * *

Norbet T. Lindtrop of Grosny and Baku, a geologist representing the Russian Soviet Government, is visiting in Los Angeles and incidentally looking over the fields. Mr. Lindtrop has been particularly impressed by the growth of the industry in California.

* * *

Joe A. O'Brien, superintendent in Kansas for the Carter Oil Company, has been transferred from Russell County to the new field in Kingman County. Mr. O'Brien this year completed 15 years' foreign service in the oil fields of Rumania for the Carter interests.

* * *

Dave Harris, treasurer of the Empire Companies, accompanied by Ralph Harvey, manager of the employe division of the customer ownership department of the Henry L. Doherty Company, made a trip to Fort Worth, Tex., at which time they conferred with Cities Service Oil Company officials.

* * *

Appointment of J. H. Beck, president of the Pennsylvania Refining Company of Karns City, Pa., as a director of the Pennsylvania Grade Crude Oil Association to represent the Butler district, is announced. Mr. Beck succeeds Lewis P. Litzinger of the Butler County Oil Refining Company, Butler, who recently resigned.

R. B. Kahle, president of the Louisiana Oil Refining Corporation, has been elected president of the Beacon Oil Company of Boston, following the recent purchase of a controlling interest in that company by the Louisiana Corporation. Mr. Kahle is in Boston at present but will continue to make his headquarters in Shreveport.

* * *

W. E. Ford has joined the ranks of oil scouts in the Wichita Falls, Tex., district, having been transferred by the Roxana Petroleum Corporation from the Shreveport division to the North Texas fields, relieving "Buddy" Hale, formerly field scout in the Archer-Young Pool. Mr. Hale has been detailed on special work out of the city offices.

* * *

Jay Taylor, superintendent of the Halliburton Oil Well Cementing Company, has enrolled for a course in petroleum engineering at the University of Oklahoma, at the direction of his company, which is footing the bill. Taylor is a former tool dresser and rotary driller, and has done considerable work in the Amarillo, Tex., district.

* * *

Walter K. Wilson, who has been in the employ of the Roxana Petroleum Corporation at Winfield, Kans., moved to El Dorado several days ago where he will be a scout for the Empire Gas & Fuel Company. Mr. Wilson takes the position formerly held by Leland S. Belford, who has been transferred to the Empire's land department and is waiting for an assignment.

* * *

B. A. Meyers (Bart) field superintendent of the Carter Oil Company in the Salt Creek Field, has left Casper, Wyo., for a short visit with relatives in his old home in Rouseville, Pa., near Oil City, and from that point will journey to Venezuela where he will have a similar position in the South American country. Mrs. Meyers will accompany her husband to South America.

* * *

A delegation of the British Empire Parliamentary Association, consisting of Lord Peel, the First Commissioner of Works, Lord Queenborough, Commander Carlyon Bellairs and A. E. Jacob, visited the Pitch Lake, Trinidad, and watched the digging of bitumen, the refining process at the asphalt factory, and the loading for transport to London or to the United States. They subsequently toured the Apex oil fields, inspected 12 producing wells, and saw two new wells being drilled.

* * *

Nate Foote and son, Maynard, of Bolivar, N. Y., have been in New York to meet some of the officers of the Magdalena Oil Syndicate and make arrangements to go to Colombia, South America, where they will work on a test oil well that will be drilled in that country. They will sail from New York as soon as they receive their passports, the latter part of this month. Will Foote and his tooldresser will leave the latter part of February or the forepart of March. The Footes spent a year drilling on a test well in Panama for the Carib Syndicate a couple of years ago.

* * *

James W. Lawler, formerly of Oil City, Pa., and recently returned to Wyoming from an extended visit in the East, will hereafter be located at Laramie, Wyo., as superintendent of the Rock River division of the Illinois Pipe Line Company. Mr. Lawler has served the Illinois Pipe Line Company as superintendent at Sunburst for the northern Montana district for the past five years. He came to the Wyoming oil regions during the early days of the development and is now classed with the "old-timers" of that region.

* * *

J. Edgar Pew has been elected president of Beacon-Sun Oil Company, which has large acreage in Venezuela and is jointly owned by Sun Oil Company and Beacon Oil Company. Mr. Pew recently completed a term of office as president of American Petroleum Institute. R. B. Kahle of Beacon Oil Company has been elected a director of Beacon-Sun Oil. Mr. Pew will leave shortly for Venezuela on a trip of inspection of the properties. Standard Oil Company of California has started its first drilling on the Beacon-Sun properties under its contract for development of part of the acreage.

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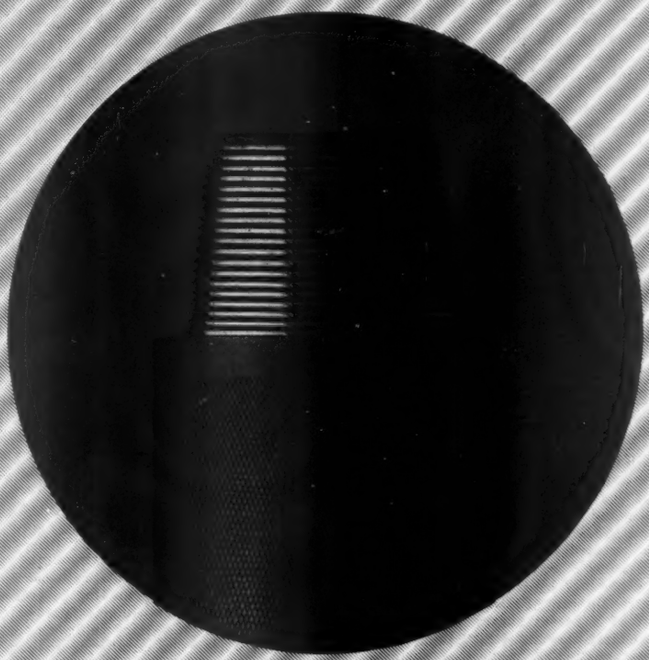

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NATURAL GAS DEVELOPMENTS

Fuel Oil Consumption By Utility Companies Declined 38 Per Cent

By Charles E. Kern
Washington Bureau,
The Oil and Gas Journal

WASHINGTON, D. C., Feb. 15.—The Division of Power Resources of the Geological Survey has compiled statistical information showing the production of electrical power by public utility power plants in the United States for December, 1925, and for the calendar year of 1925, giving the number of barrels of fuel oil and the natural gas used in these operations.

The fuel oil, natural gas and wood consumed by the public utility power plants constitute about 10 per cent of the fuel so used, the balance being coal.

During 1925, there were consumed for this purpose 10,254,000 bbls. of fuel oil and 48,443,000,000 feet of natural gas. While the coal consumption increased 7.0 per cent, the fuel oil consumption was decreased 38.3 per cent, and the natural gas consumption, 4.1 per cent, compared with the calendar year of 1924. This large decrease in the consumption of fuel oil and natural gas in 1925, was chiefly due to the fact that in California during 1924, there was a shortage of water supply, whereas, in 1925, the water supply was greatly increased. That made it necessary to turn to fuel oil, and to natural gas in 1924, to maintain the public utility power plants up to capacity.

Consumption of both fuel oil and coal showed an increase during December as compared to the previous month. During December, these utilities used 817,548 bbls. of fuel oil and 3,764,934 tons of coal, while during November only 793,387 bbls. of fuel oil and 3,470,439 tons of coal were consumed. The use of natural gas continued its steady decline.

In 1925, the total kilowatt hours produced by all of these plants in the United States was 65,801,000,000 being an increase of 11.5 per cent over 1924, and the high point for all time. Of these kilowatt hours, 33.9 per cent were produced by water power. Fuel power produced 43,479,000,000 kilowatt hours, or 66.1 per cent of the whole production.

A very large percentage of increase is shown in the efficiency of the public utility power plants of 1925 compared with 1919. In 1919, it required 3.2 pounds of coal to produce a kilowatt hour of electricity, whereas, in 1925, a kilowatt hour was produced with only 2.1 pounds of coal. The refusal of municipalities and others to permit an increase in public utility rates after 1919, although wages and other costs were increased, is credited with considerable influence in producing this tremendous decrease in the cost of production. Figured per ton of coal 950 kilowatt hours were produced from one short ton of 2,000 pounds, whereas, in 1919, only 625 kilowatt hours were produced from that amount of coal. The chief reduction was the result of economies in the use of coal. There were comparatively small economies achieved per barrel of oil or cubic foot of natural gasoline. In the entire United States, an average of 200 kilowatt hours were produced from a barrel of fuel oil when burned in power plants. Incidentally, it is noted that a Diesel engine has about twice that much efficiency. In California in 1924, a barrel of oil of 42 gallons produced 216 kilowatt hours, which indicates a higher efficiency for that state in the use of fuel oil by its public utility power plants than prevails over the United States. One New England state, however, averaged 252 kilowatt hours from a barrel of oil, the California record showing less efficiency than the New England state, resulting from the fact that in California, the oil was used in emergency plants, whereas, in New England, it was used regularly.

Reducing the fuel oil, natural gas and wood to terms of coal, there were used throughout the United States 1½ tons of coal per second by public utility power plants throughout the year.

TO BUILD COMPRESSOR NEAR ARKADELPHIA, ARK.

SHREVEPORT, La., Feb. 13.—The Arkansas Natural Gas Co. will build during the current year an additional compressor station, near Arkadelphia, Ark., at a cost of approximately $350,000. This company has a 16-inch gas line extending from the Caddo Field to Little Rock, Ark., supplying also the towns of Hot Springs, Malvern, Pine Bluff, Arkadelphia, Hope, Prescott, Gurdon and other points en route, and in time of ordinary low temperatures, the present power is sufficient. There are periods during exceptionally mild weather when the compressor stations are dispensed with entirely and the gas pushed as far as Little Rock, Ark., by natural pressure from the famous deep well in the Caddo Field, owned by the Dixie Oil Co. In severe weather, however, the pressure has been found inadequate and the new station will be equipped with eight 400-horse power units.

NEW ESTIMATES MADE ON GRADY COUNTY GAS

OKLAHOMA CITY, Okla., Feb. 13.—The approximate quantity of natural gas that may be received from the major producing field of Grady County is between 68,300,000,000 and 73,600,000,000 feet, according to a report filed with a "citizen's committee" of Oklahoma City recently by engineers of the United States Bureau of Mines. It was a report of a recent survey made by R. R. Brandenthaler and E. P. Campbell, who were assigned on request of business interests of Oklahoma City.

Two producing sands were examined, the Ramsey and the Nichlos. The former was found to contain the greater possibilities, having an approximate recovery capacity of 61,000,000,000 feet. The latter was believed to have between 7,300,000,000 and 12,600,000,000 feet. What is known as the Magnolia sand was not examined, nor was an examination made of a sand recently discovered at a depth of about 2,500 feet. This latter sand is said to have a daily capacity of 45,000,000 feet and gas from it is being run through the Hall-Briscoe pipe line for delivery to the interstate trunk line of the Lone Star Gas Co. of Texas.

The engineers employed both saturation and decline-volume methods in making their tests and estimates. These methods also were employed previously by Paul Stockwell, an engineer of the corporation commission, who estimated the recoverable capacity of the sands at about 71,140,000,000 cubic feet.

LARUTAN CO. CONTRACT

OKLAHOMA CITY, Okla., Feb. 13.—The Larutan Fuel Co. a natural gas purchasing concern of northern Oklahoma and southern Kansas, has contracted to sell gas to the American Potato Co,. which is entering the gas distributing business in Kansas, having been granted franchises at Lyons and Sterling. Industrial rates ranging from 20½ to 50 cents per 1,000 feet are provided. Two large salt plants at Lyons will begin the use of gas for fuel and the location of a sugar beet factory at Sterling is said to have been determined by gas becoming available there.

FUEL OIL REDUCTION AIDS GAS CONSUMERS

LOS ANGELES, Calif., Feb. 13.—Consumers of manufactured gas throughout the State of California are paying at the rate of $90,000 a month less for their gas than they paid at the beginning of 1925, as the result of the action of the railroad commission in passing on to gas users the benefits in reductions in the price of fuel oil.

Fuel oil cost is the controlling factor in the price of manufactured gas. The commission, accordingly, through its plan of automatic rate adjustments, has adopted the policy of reflecting in the gas rates, without the formality of formal hearings, changes in fuel-oil prices, in the ratio of 3 cents per 1,000 feet of gas for each change of 10 cents per barrel in the price of oil.

During the fiscal year ending December 31, there were four changes in the price of fuel oil which affected the gas rates of companies manufacturing artificial gas and operating under automatic gas rates. During the first part of the year there was an increase in the price of oil which affected the gas rates for approximately a period of four months. Since that time there has been a constant decrease at intervals of approximately three months which resulted in the cost of fuel oil being considerably below the cost at the first of the year.

The commission has before it applications from the Southern California Gas Co., the Los Angeles Gas & Electric Co. and the Midway Gas Co. for an increase in rates and considerable evidence has been introduced during the preliminary hearings which in turn is being checked by the engineers of the commission.

In addition to the handling of formal proceedings, the gas department of the engineering division of the railroad commission is continually making inspections of the companies with reference to the type and class of service being rendered; also the purity and quality of gas served and the standardizing of the companies' testing apparatus for the heating value of the gas, and the equipment for testing the consumers' meters.

GAS SURCHARGE VOID KANSAS COURT RULES

WICHITA, Kans., Feb. 16.—The $16 gas surcharge assessed against Wichita householders in 1919 was illegally levied and illegally collected, according to a decision handed down by Judge Grover Pierpont in the test case brought by Earl C. Elliott, city manager, against the Empire Natural Gas Co. to prevent the collection of the surcharge.

Judge Pierpont held that the Kansas Public Utilities Commission had no authority to make any change in the gas rates of its own volition unless it first made a finding that the existing rates were unreasonable, guided in his decision to a considerable extent by a decision in a similar case in the Supreme Court.

Approximately $200,000 was collected as a surcharge from gas consumers in Wichita before the practice was stopped. In fact, $2 a month was charged for eight months, from each customer and collected about two years later.

The case probably will be appealed to the Supreme Court.

The gas case was first filed as an injunction suit by City Manager Elliott in June, 1922, when he refused to pay the $16 surcharge and the gas company threatened to shut off his gas. Judge Thornton W. Sargent issued a temporary order restraining the company from carrying out its threat against Elliott, and immediately the Empire Co. took the case to the United States Court, where, eventually, in the Circuit Court of Appeals at St. Louis, it was decided that only the State Court had jurisdiction, and the case was sent back to Wichita for retrial.

Judge Pierpont made the following conclusions of law in his decision:

First. That the order of the Public Utilities Commission of December 22, 1919, was and is illegal, void and of no effect for these reasons:

No jurisdiction was acquired by the commission of either of the parties or the subject matter thereof; no hearing was had upon the justness or reasonableness of the then existing rate; no finding was made that the then existing rate was "unjust, unreasonable, unjustly discriminatory or unduly preferential;" the order did not fix or purport to fix a rate or schedule of rates.

Second. That Ordinance No. 2,470 of the City of Wichita was a valid and subsisting ordinance during the year 1919 and the months of January to August, inclusive, 1920, the time in question in this action, and

That the plaintiff was entitled to natural gas from the defendants at the rates therein provided.

Third. That the plaintiff, Earl C. Elliott, having paid the rate provided by ordinance during the time in question, is entitled to an injunction against the defendants, The Empire Natural Gas Co. and the Kansas Gas & Electric Co., corporations, their servants, agents and employes and their successors and assigns, if any.

Permanently enjoining and restraining them from enforcing or attempting to enforce a $16 charge against the plaintiff under the so-called order of December 22, 1919, and from discontinuing, shutting off or attempting to shut off plaintiff's supply of natural gas on account of any charge arising out of the order of December 22, 1919.

TO INCREASE PERRY RATE

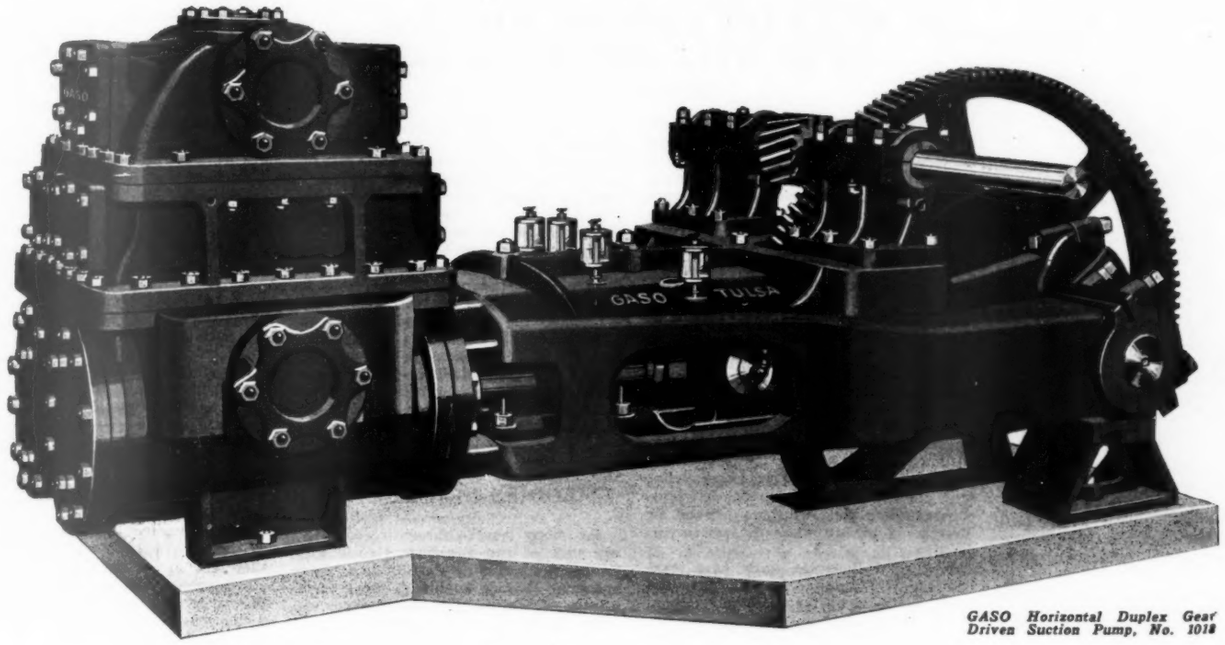
OKLAHOMA CITY, Okla., Feb. 13.—The corporation commission has permitted the Star Pipe Line Co. of Perry to increase its domestic gas rate in Perry from 50 cents to 60 cents per 1,000 cubic feet. Gas consumers joined in the company's petition for an increase, after the company had expended an additional $42,000 in laying a pipe line to a Kay County Field. A gas supply had been obtained from a field near Perry but it was found that the heat units in this gas were too low to make its use profitable.

ELK CITY GETS GAS

ELK CITY, Okla., Feb. 13.—For the first time Elk City now has natural gas service. The Brickell Gas Co., which several months ago secured a franchise to furnish gas to this city, has connected industrial plants and the business section with its distribution system and is installing service in residences. The gas is piped here from wells in the Sayre Field.

GAS RATES REDUCED

OKLAHOMA CITY, Okla., Feb. 13.—Substantial cuts in domestic gas rates were made by the Oklahoma Natural Gas Co. in five towns in northern Oklahoma. The rates were reduced from 63 cents to 50 cents per 1,000 feet at Hunter, Deer Creek, Lamont, Nardin and Pond Creek. The reductions were made through the corporation commission by agreement between the commission, town councils and the Oklahoma Natural Gas Co.



GASO Horizontal Duplex Gear Driven Suction Pump, No. 1018

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Motor Drive For Oil Industry Pumps

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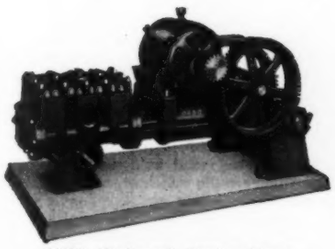
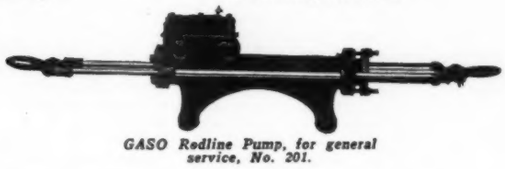
Practically any power pump in the extensive Gaso line, with the exception of the small pumps designed for connection to rod lines, walking beams, etc., may now be had in electrified type.

The upper illustration at right shows our Number 501 Pump, Motor Mounted.

Our large Duplex Gear-Driven Suction Pump shown above is also offered with motor mounted on frame.



GASO Horizontal Duplex Power Pump, General Service Type, Motor Mounted, No. 501-E.



GASO Redline Pump, for general service, No. 201.

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EQUIPMENT AND SUPPLIES

NEW HEAVY DUTY TRUCKS DESIGNED FOR INDUSTRY

New heavy duty trucks especially designed to adequately care for the increasing hauling problems of industry are announced by the General Motors Truck Co. The needs of every industrial division requiring sturdy and powerful trucks was thoroughly studied by competent engineers and their findings were used as the basis of the mechanical and engineering design of the new trucks.

Two of the models, the 5-ton and the 3½-ton, have been named "Big Brute" as typifying their inherent strength. The third model, the 2½-ton, has been designed along lines that produce fleetness combined with strength. All three models contain new mechanical and engineering achievements.

Investigation in manufacturing and commercial lines indicated that four fundamentals were being demanded by the growing class of truck users. These were: Power, accuracy of construction to eliminate need of frequent repairs, design that permits easy and quick servicing, and ease of operation which produces efficiency in operation. These combine to give the greatest economy of operation.

Added power has been supplied in these new GMC trucks and new manufacturing methods have permitted even finer limits of accuracy.

Several new features of design have been added to further increase the ease of performing necessary service operations. These not only reduce upkeep cost but also shorten the time a truck is withdrawn from work.

Investigators discovered that driver comfort and ease of operation were points long overlooked in truck design, and that this comfort would greatly add to the efficiency of the truck's operation. To meet this demand, an all steel cab was designed by the Fisher Body Corp. in collaboration with General Motors engineers and is used as standard equipment on all GMC heavy duty trucks. This cab is rattle proof, has a one-piece full vision ventilating windshield, comfortable spring seats, and is equipped with sliding doors and sliding curtains providing complete protection against the worst weather.

Among the mechanical improvements are included a new metal used in the removable cylinder walls which gives greater hardness and wearing quality; double honing completes the mirror-like finish of the walls; lapped piston pins; new metal alloys for the valves, and a special "coining" finish which improves their wear and reduces noise.

The new models are fully equipped. The electrical equipment includes battery, generator, head, dash and tail lights. Heavy steel bumpers, sheet steel fenders which extend from the bumpers back to the running board, radiator cross bar, automatic windshield wiper, two hooks and license plate holder—as well as the new Fisher built cabs—are standard equipment on all models. Oversize tires provide better traction and cover legislation requirements.

BOOKLET ON PAINTING

The Aluminum Co. of America has printed a very interesting and instructive booklet entitled "Aluminum Paint." This booklet gives complete instruction for the selection, preparation and proper use of this rapidly increasing coating.

Special attention is given in the booklet to "priming coats" and the selection of the proper "paint vehicle." Wood, steel, concrete and various surfaces are treated in a section intended to educate the user of paint in regard to the proper method of giving separate treatments to different surfaces.

PIPE MILLS ARE LOOKING FOR YEAR TO BE WELL ABOVE THE AVERAGE

By B. E. V. Luty

PITTSBURGH, Pa., Feb. 15.—While the talk in the trade lately has been of decreasing steel mill operations the actual record is that January showed a new high pace on this movement, the rate of steel ingot production being the highest since that of March of last year. There was little variation and the three months, November, December and January, may be regarded simply as showing high and well sustained production, at a rate 34 per cent above the average in the seven postwar years up to the present year.

All indications are that mill operations are in line to taper off slightly, but only slightly. Buying has been relatively light in the past 60 days, in steel products generally, compared with the preceding 60 to 90 days, but at the same time buyers have been receiving heavy deliveries and presumably as the deliveries on old orders run out there will be an increase in buying, more or less corresponding.

In several lines the mills have good backlogs of business. In rails they are fairly well sold up for the whole season. In structural steel the contracts for actual fabrication will require mill deliveries for several months, and fresh contract lettings have kept up fairly well, the average since January 1 being but little below the average of 1925, which made a new high record. In the matter of freight cars, orders placed in November, December and January totaled about 36,000 cars, representing a rate above the average, while for five months prior to November 1 there had been scarcely any buying. In tin plate the mills are well sold up for the half year.

In pipe, wire products and sheets the mills have little business ahead, but there are fair bookings from day to day.

Prices Holding Well

Steel prices are holding their position very well. The apparent exception is sheets, which have been selling off, but the exception is apparent only, as sheets had not established their position at the recent asking prices. There were successive price advances in October and November announced by mills, and it is the last advance that is in question, but when it was announced there was much doubt whether it would hold. The market has become quotable at ranges, as follows: Blue annealed sheets, 2.45 cents to 2.50 cents; black sheets, 3.25 cents to 3.35 cents; galvanized sheets, 4.50 cents to 4.60 cents; automobile sheets, 4.40 cents to 4.50 cents, but even the lower of these figures are higher than the market ruling October 1. In other finished steel products there have been no definite advances or declines for quite a while.

While the general tone of the steel trade seems easier, and some feeling of disappointment has been expressed, it appears that there has been merely a disappointment of expectations that were set too high. The present state of trade is much better than that of four months and more ago. All the steel consuming lines are working very well or moderately well, and there is not one that has definitely poorer prospects than two or three months ago.

Buying of merchant pipe remains of moderate proportions, reflecting the light consumption at this time of year and the indisposition of jobbers to stock up for spring trade as they used to do.

Oil Country Buying Grows

Buying of oil country tubular goods has increased farther in the past week. This trade has been picking up steadily since the holidays and while it is not yet equal in volume to the average throughput a year it is making for such a position for the near future if the present pace continues. The pipe mills seem to be thoroughly convinced that the year's demand for well drilling will be much above the average.

Pig iron continues dull in all markets. Consumers are covered to April 1 and are indisposed at the present time to make further commitments.

Connellsville coke, for domestic consumption in the East, has reached new high levels, $11 to $12 for run of oven coke and $12 to $14.50 for yard crushed, but the market is now softening as the demand will last only a very few weeks longer.

NEW BESSEMER ENGINE EMBODIES NEW FEATURES

For many months the entire engineering staff of the Bessemer Gas Engine Co. has been working steadily on a newer and finer oil field engine. During many months of engineering research and field survey work they have perfected and put into production a new oil field engine. Not only are the improvements and refinements features of note but Bessemer ruggedness has been maintained and even increased. While the new oil field engine differs radically from the old Bessemer oil country engine, it incorporates features which have been standard on the larger, finer Bessemer gas engines.

The bed plate of the new oil country engine is of the enclosed case type employing splash lubrication, bored crosshead guides, with the bearing jaws of the same type used on Bessemer enclosed case engines. The mixing valve has been placed on top of the bed, a feature quickly appreciated by oil field engine operators.

The main bearings are of the same type as are being used in the enclosed case Bessemers. In the crank shaft the Bessemer has utilized a perfected unit of its finer engines. The crank shaft is a duplicate of the regular Bessemer commercial engine with the added feature of balancing counterweights. It is of heat treated steel of unusual strength with a wide margin of surplus strength for even abnormal running conditions.

The connecting rod, like that of the enclosed case Bessemers, is of the marine type. It is forged from 30 carbon open hearth steel and finished all over. The crosshead construction is of the adjustable shoe type with the shoes adjustable both at the top and bottom.

The stuffing box is metallic, of the well-known floating type built by Bessemer. It is built as a part of the flange which separates the mixing chamber from the bed, a construction feature which is exactly like that of the power end of the Type Ten compressor.

The cylinder is of the same general design as that of the Type Ten compressor. The flange on the side of the cylinder has, however, been flattened out to correspond with the width of the bed which is made as narrow as practicable. The cylinder head end has been made an exact duplicate of the regular Bessemer Enclosed Case Type. The cylinder also has a hand hole plate on each side, so that access to the water jacket is unusually easy when cleaning may be necessary. The piston head, rod and rings are duplicates of those used in the regular E. C. Type gas engines, cutting down repair parts stock still again.

The air valve on the oil country engine is of unique design which was developed after much study and many experiments. The gas chamber is connected diametrically across the valve body under the seat with the holes drilled from the valve seat into this chamber so that both discs have their own individual gas opening. Thus when either of the discs is raised from its seat both air and gas are admitted in the correct proportions. This type of valve overcomes any possibility of failure to start when only one disc is opened.

The lubrication is combination force feed and splash with the cylinder and eccentric lubricated by force feed and all other parts lubricated by splash. The main bearings, crank pin, cross head and slides run in a continual bath of oil from the splash in the crank case.

The Wico ignition and governor has been adopted as standard on the new Bessemer oil field engine and is being used on other Bessemer engines as well.

METHOD OF STARTING ENGINE IS DESCRIBED

How many operators of heavy duty gasoline engines really know the most efficient method of starting the engine they are operating? The Climax Engineering Co., Clinton, Iowa, which manufactures Climax "Trustworthy" engines which are widely used in the equipment machine field, have issued a new instruction book in which it has this to say on the subject.

"Retard the spark by pulling the magneto breaker housing lever up as far as it will go. Set the impulse starter on the magneto unless it is automatic. If the engine has been standing more than a few minutes, pour a small quantity of gasoline through the priming cups in each cylinder. Set the choker of the carburetor about three-fourths closed. Throw out the engine clutch if it is fitted with one. If your engine is equipped with a starter, press the starting switch lever just long enough to get the first explosion of the engine. Release lever immediately upon the engine starting. Open carburetor choke and advance the spark by pushing the magneto breaker housing lever down. Allow the engine to run idle until warmed up before applying load. If the engine does not start immediately do not let the starting motor continue to turn over the engine. Using the starting motor for more than a few seconds continuously will damage the windings and will run down the storage battery very quickly. When using the starting crank to start the engine, crank the engine with retarded spark and choke set three-quarters closed. Pull up on the crank handle. Do not push down on the starting crank. It is dangerous."

GASOLINE PUMPS

The Butler Manufacturing Co. of Kansas City, Mo., is sending out folders describing the Butler visible gasoline pump for filling stations. The folder describes the operation and construction of the three different models in which the pump is made.

DESCRIBES GASOLINE DRUMS

The Detroit Range, Boiler & Steel Barrel Co. of Detroit, Mich., has distributed folders describing gasoline drums and steel barrels for the oil trade. The folder also contains a complete price list.

ENLARGES FACILITIES

Celite Products Co. announces the removal of its San Francisco office from the Monadnock Building to 140 Spear Street, San Francisco. This change is made to provide larger quarters and better operating facilities.

Rejuvenation of Depleted Oil Fields

Pressure Method of Production Placed Before Federal Conservation Board By J. O. Lewis Who Argues Its Advantages

By James O. Lewis*

Under average conditions, the gas issuing with the oil represents an expenditure of energy equal to 10 horse power hours for each barrel of oil brought to the surface. This means that the work required to expel the oil from the sand is equal to the work performed by a horse in a 10-hour day. So tightly held is the oil in the sand that it takes all of the energy stored in several barrels of oil to recover 1 bbl. of oil and to recover the remaining barrels of oil that have been robbed of gas outside force must be applied. Conditions vary so widely the percentage of natural recovery can be expected to vary widely also.

1. Estimates based on the area, thickness and porosity of the sand bodies most commonly show from 5 to 20 times as much capacity to hold oil as the oil recovered. Such estimates have been questioned because of likely errors in the porosity and thickness of sand and because they assume that the oil originally occupied the entire capacity of the sand body.

2. On the average, about 1,500 feet of gas is produced with each barrel of oil, and this gas has an average pressure of about 750 pounds and solubility of about 40 per cent at the underground temperature. The barrel of oil produced could contain only 120 feet of the gas produced so that the remaining 1,380 feet came from the sand where it was either held in solution in 11½ other bbls. of unrecovered oil, or else occurred partly as free gas. If the former, the average recovery would be less than 8 per cent. This evidence checks the estimates of capacity in sector one, or even if all of the gas produced had been free gas, it would occupy five times as much space underground as the barrel of oil produced. If all the gas was in solution, it would indicate 12½ times as much capacity.

This evidence reduces the question to what part of the space might have been occupied by free gas. Fields which are known to have a body of free gas above the oil are excluded from this estimate. It is possible that a little free gas may be entrapped in the irregularities of the sand body, but it does not appear physically possible to have partial saturation to an appreciable extent under common oil field conditions.

Laboratory Experiments

3. Laboratory experiments conducted under conditions far more favorable for high recoveries than in the oil fields, indicate that only low recoveries can be expected from the expansion of the charge of gas that can be absorbed in the oil. The same experiments also show that a smaller percentage of the contained oil is expelled from a partially saturated sand than from a fully saturated sand, though the volume of gas is much greater. The efficiency of expulsion becomes less and less as the oil is depleted from the sand.

4. Field experience data, as well as theory, demonstrates that closer spacing of wells greatly increase the recovery of oil at a rate approximately inversely proportionate to the distance between wells. Thus with wells 660 feet apart (10 acres to each well), showing a 10 per cent recovery, the recovery would be 20 per cent if the wells were spaced 330 feet apart, and 40 per cent if the wells were 165 feet apart, and so on.

The underlying law is more involved than the proximate rule given, which holds reasonably true only between ordinary variations in spacing and which is reduced to absurdity if followed without modification to the ultimate limits. But the evidence shows beyond any reasonable doubt that but a small part of the recoverable oil is being obtained by prevailing well spacing.

5. At Pechelbronn, France, 15 miles of galleries have been driven through the oil sands, and it has been ascertained from large scale operators that only 14.3 per cent of the oil had been recovered by the wells, that an additional 43 per cent is being recovered under commercial conditions by drainage into galleries, leaving another 43 per cent in the rock. Near Hanover, Germany, under conditions paralleling those of the salt domes of the Gulf Coast, the recoveries from wells was but 13.7 per cent.

Deductions Vindicated

These two instances can hardly be taken as representing average conditions, but at least they are indicative of what may be expected elsewhere. The system of drainage galleries used in a special application of the law of well spacing, and vindicates the deductions made from it by increasing recovery from 14.3 per cent to 57.3 per cent at Pechelbronn.

6. Cores taken through supposedly exhausted oil sands at Bradford and elsewhere in the United States, for the most part confirm the above evidence. At Bradford, the natural recovery indicated by the few cores taken, has been hardly 10 per cent, although the sand is shown by the cores to be saturated from top to bottom. Cores taken elsewhere in the Eastern Fields indicate comparable conditions. Some cores taken in the Mid-Continent Field indicate the same conditions, but a few cores taken from the shoestring streaks in Kansas indicate less sand body than reported, and some of the supposed oil bearing sand to contain gas alone.

The shoestring sands of Kansas are special conditions, and could be shown to be such by other tests here given.

7. Laboratory experiments indicate that from 15 per cent to 50 per cent of the oil under the common range of conditions would not drain out or flush out with water and can not be blown out with either air or gas. This represents the oil that will require special treatment either with heat or with some agent that will loosen its adhesion to the sand grains.

Under laboratory conditions, air or gas will recover the most oil, drainage next, and water, will recover the least. This portion of the oil adheres so closely to the sand grains that it is irrecoverable by present commercial practices. It will require special treatment by heat, chemicals or other agents that will loosen its hold in the sand. Until such agent capable of commercial application has been discovered, I estimate the irreducible minimum that must be left in the sands as from 25 per cent to 75 per cent, according to local conditions.

I do not think this oil left underground can fairly be considered a waste for it is still recoverable and its value as a reserve for future needs is greater than would have been its value if it had been possible to throw it on the market during these past years of over abundant supply.

Broadly speaking, I estimate that one-seventh of the oil has been recovered by old processes, another seventh seems possible by present commercial practices for rejuvenating depleted oil fields, another two-sevenths seems possible by improvements in present rejuvenating processes and three-sevenths can be recovered only by radical improvements over methods now in use.

Methods for Increasing Recovery

To recover the oil left underground, it is first necessary to loosen the hold of the oil to the fine pores in the sand and then to force the loosened oil into the well or gallery from which it can be brought to the surface. Air, gas, water, and the pull of gravity all act both as loosening agents and carrying agents, but by itself none of them will completely remove the oil even under the most favorable conditions. To gain very high recoveries it will be necessary to supplement these carrying agents with some additional agent that will reduce the tendency for the oil to adhere to the sand grains. Under foreseeable economic conditions, such agent must be applied to the rock while in place, or there seems to be no reasonable hope of being able to mine the sand and bring it to the surface to treat it there at a profit. Heat is one agent that can be used to reduce the adhesion of the oil to the sand, but I believe this will be of limited commercial application because so much of the heat will be wasted in heating up the rock itself and the same heat could be better used turned into mechanical energy. Doctor Nutting, of the Geological Survey, has discovered that soda ash dissolved in water is an effective agent, and this is being tried in the Bradford Field. It is yet too early to say whether this will be effective under commercial conditions. The discovery of a successful commercial agent for loosening the oil from the sand would at least double the recoverable reserves.

The three successful processes that have been used on extensive commercial scales are, first, forcing air or gas under pressure through the sands; second, forcing water through the sands; third, digging galleries through the sands into which the oil drains. As one of the most important conditions is the price of oil, it may be expected that the processes to be used will change as prices are stimulated or depressed by market demands.

Air and Gas Pressure Process

The use of air or gas most closely resemble the usual conditions of natural production, the depleted natural gas being replaced by air or gas compressed by machinery. The air or gas is forced into certain wells on the property from whence it makes its way through the oil sand into nearby producing wells. The only special equipment required is the compression plant and this becomes a combination pressure and gasoline extraction plant, as the air or gas picks up gasoline vapors in its passage through the rock. If a gasoline compression plant is already on the property, it can often be used in whole or in part with a consequent reduction in installation cost. Ordinarily few or no wells need be drilled.

This process has been in successful commercial use for 14 years, first in the Eastern Fields and more recently in the Western Fields where many plants are now being installed. Figures are not available as to the number of wells to which it is being applied, but I estimate them as not less than 20,000, most of them being in Ohio, West Virginia and Pennsylvania. From the few cases where records of past production have been obtainable, the increased recoveries will average 100 per cent. That is, if a property had produced 100,000 bbls. under

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*Before Federal Oil Conservation Board, Washington.

PRELIMINARY PETROLEUM STATISTICS FOR 1925 FROM THE BUREAU OF MINES

By R. G. Hopkins
Petroleum Economist

According to preliminary figures, issued by the Bureau of Mines, Department of Commerce, compiled from reports of companies that operate gathering lines, 755,852,000 bbls. of petroleum was transported from producing properties in the United States during the year 1925. Final production figures, which will include the quantity of petroleum consumed for fuel on the leases and the net change for the year of stocks held on producing properties, obtained from the annual canvass of producers, may show a total output for the year of approximately 764,000,000 bbls. This is an increase of 7 per cent over 1924 and of 4.3 per cent over the previous high figure of 1923.

Preliminary figures and estimates indicate that the world production of crude oil in 1925 will be in excess of 1,060,000,000 bbls., and may possibly amount to 1,070,000,000 bbls. This is an increase of 5.5 per cent over the 1924 output, which was largely due to the 50,000,000-bbl. increase in the United States. Production in Mexico fell off 25,000,000 bbls., but gains were made in most of the other important foreign oil-producing countries, notably Venezuela, which, for the second successive year, more than doubled its output and now has a daily production of fifty times what it was five years ago.

As was the case in 1924, the lowest daily average production—1,920,000 bbls.—was recorded during the month of January. Increases were then recorded for each succeeding month up to June, which had the maximum daily average production of the year—2,222,000 bbls. Production then fell off each month thereafter, so that the daily average production for December was over 250,000 bbls. lower than that for June, but was almost 50,000 bbls., or 2.4 per cent, over that for January.

Among the fields developed during the year 1925, Wortham, Smackover, Inglewood and Garber are prominent. Wortham made itself felt during the early part of the year, and reached a peak of almost 170,000 bbls. per day, being noteworthy for the speed with which it was developed. Smackover was the scene of another boom during the spring and early summer, with deeper sands supplying heavy oil figuring prominently. Inglewood was developed during the summer months and reached its peak of slightly over 100,000 bbls. per day of heavy oil in August. Garber was developed during the fall months but did not come up to predictions, due to water encroachments. Fortunately, the year 1925 was characterized by a well-balanced production, fields being developed in time to prevent declines in output.

Light and Heavy Oil

In response to a growing demand by the industry, the 1925 output figures have been classified by gravity into two classes, light and heavy crude, the former including all grades 24 degrees A.P.I., or lighter, east of California, and 20 degrees A.P.I., or lighter, for California. Of the 756,000,000 bbls. of crude petroleum transported from producing properties during 1925, 540,000,000 bbls., or 71 per cent, was light crude. This was nearly the same as the total for 1924, but which was 76 per cent of the production for that year. The production of light crude for February was the highest for the year, comprising over 78 per cent of the total, after which the proportion of heavy crude began to increase, due to Smackover deep sand developments, so that by June the percentage of light crude had dropped to 68, the low point for the year.

The consumption of domestic crude petroleum east of California during 1925 amounted to 596,043,000 bbls., of which 539,375,000 bbls. was run to stills and the remainder, 56,668,000 bbls., or 9.5 per cent, was either lost in handling or was burned as fuel in the crude state.

Total imports of crude petroleum during 1925 amounted to 62,005,000 bbls., a decrease from 1924 of 15,770,000 bbls., or 20 per cent. Imports from Mexico amounted to 55,111,000 bbls., a decrease of almost 20,000,000

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Possible Changes In Refining Method

President of Gulf Refining Company Discusses Conservation in the Manufacturing Branch Before Oil Board

By George S. Davison*
President, Gulf Refining Co.

For the most part conferences with, hearings before, and examinations by legislative and other Governmental commissions and committees with which I have been familiar have been concerned with the price of petroleum products to the consuming public; but the present problem consists in providing for the future necessities of the public for different petroleum products, if this is at all possible, regardless of price.

The part assigned to me in this conference is to discuss the "possible changes in refining and marketing practices." I will first speak of refining petroleum.

The first problem of the early refiner was to get from his crude oil, say, 50 per cent of carbon oil or kerosene (both names taken from their predecessor made from coal), and the second, to make away with the remaining parts of the crude oil not needed for fuel under the stills and boilers. The latter was a difficult problem for the refiner where no drainage was available, as could be seen by the oil-soaked ground for large areas around interior refineries, whereas those situated at tidewater or on the bank of a river had an easier way of getting rid of the unneeded products, although such conveniences did not altogether prevent the oil saturation of the immediate landscape.

The views of the refiner have materially changed since that day, until now there is not the smallest fraction of the crude oil, whether solid, liquid, or gaseous, which can not be made to serve a useful purpose, and for the most part is so utilized. As an indication of the change, not only from my boyhood days but during the last 20 years, one of our experts at Port Arthur ascribes the recent return of the mosquito plague there (which years ago was serious enough on one occasion to stop the running of trains on the T. & N. O. Railroad) to the fact that oil seepages and overflows from the refineries have been kept off the surface of the bayous. This improvement is due in part to the striving for economy by the refinery people, but it is only fair to attribute a portion of the credit to the vigorous campaign of the Departments of War and Interior to stop the pollution of navigable waters.

Limit of Refining

There is a limit to what the refiner can do in the way of increasing the percentage yield from his crude oil. Inasmuch as petroleum is not readily oxidizable, he can not add oxygen from the air to his output as a lead refiner can, nor from its immiscibility can he add water to it as the lime slaker can do to his product, and the ultimate limit of his yield is 100 per cent by weight, which perhaps it is unnecessary to say, can never be obtained. Even 100 per cent by volume is impossible under any ordinary conditions, and the more petroleum is broken up into its ultimate products—lubricating oils, cracked gasolines and highly purified products of any kind—the greater the discrepancy between 100 per cent and the percentage output. It is impossible even to pump petroleum from one tank to another without incurring some loss, and the only way of getting 100 per cent by volume even in the simplest kind of refining is, as has been the case in some instances, when by trade custom the gallonage of the product is based on an arbitrary weight per gallon favorable to the refiner.

Disregarding the wastes of former years, statistics show that for the year 1925 fully 98 per cent of the crude oil was transformed in the refineries into salable products, though a part of this was as a matter of economy used in the refineries as fuel in place of coal. At many points it is more economical for the refiner to use his own oil than to bring coal into his refinery, and in some cases, regardless of the comparative costs of coal and oil, the refiner's stills and boilers have been built for the use of liquid or gaseous fuel and do not permit the use of coal; and there are certain semi-liquid products made in refining processes which, while suitable for fuel on the spot, are not suitable for shipment and sale.

*Before Federal Oil Conservation Board, Washington, D. C.

Refinery Yield

I give here a tabulation showing in column 1 an estimated refinery yield based on statistics of the consumption of various petroleum products in the year 1925; in column 2 the percentage each group is of the estimated crude run; in column 3 the ultimate percentage that could be made individually from crude of each group, with no provision for the manufacture of any of the other groups; in columns 4 and 5 two yield statements showing how crude might be subdivided if the necessities required. Of course such possible yield schedules might be made up without limit as to number.

MANUFACTURED PETROLEUM PRODUCTS
1925

Grade—	Bbls. 42 Gal. (1)	Pct. of Crude Run (2)	Maximum Possible Pct. of Crude (3)	Possible Combinations Pct. of Crude (4)	(5)
Motor fuel	236,244,000	28.7	60.0	40.0	50.0
Kerosene	62,023,000	7.5	25.0	9.0	9.0
Gas oils	32,500,000	3.9	50.0	3.0	2.0
Diesel engine oil	14,000,000	1.7	70.0	5.0	10.0
Lubricating oil	30,632,000	3.7	20.0	5.0	10.0
Wax	2,114,000	0.2	0.5	0.2	0.5
Asphalt and road oils	22,401,000	2.7	15.0	2.5	1.0
Coke	4,365,000	0.5	....	0.7	1.0
Marine fuel	110,000,000	13.4	90.0	11.0	3.0
Land fuel	284,272,000	34.5	80.0	16.7	4.5
Miscellaneous and loss	5,000,000	0.6	....	0.8	1.0
Total	803,551,000	97.4		94.0	92.0
Refinery loss		2.6		6.0	8.0
		100.0		100.0	100.0

But there are limitations to the shifts in a manufacturing yield schedule. Supposing it should become possible to make each one of the maximum outputs given in column 3, 100 per cent, it would not be possible to take advantage of such possibility because the otherwise unfulfilled demands for other products would prevent making the maxmium production of any one product.

Essential Products

While under conditions of urgent demand and satisfactory price it might be possible to turn 60 per cent of non-refractory crudes into motor fuel, there are other demands which would prevent this.

The needs for machinery lubricants will increase over the 4 per cent of the 1925 statistics instead of decreasing, and at the present time there is no known substitute for petroleum lubricants satisfactory in quality and sufficient in quantity. Although the chemists may eventually make synthetic lubricants from other materials, this is a little remote for present contemplation.

Thirty years ago it was said that besides its ostensible uses paraffin wax was used as a substitute for, and an adulterant of, almost everything which cost more than it did. I do not imagine that the variety of demands have decreased any in the intervening time, and it is hardly likely that satisfactory substitutes in any large amount could be found.

In time in this country the use of kerosene for lighting could probably be almost entirely substituted by electric lighting, so that this particular part of the petroleum yield could be turned to other uses.

Then there is the household use for heating, of oils which might otherwise be largely turned into motor fuel. With prices of the latter high enough the domestic use of these light oils would undoubtedly be replaced by that of coal, or coal gas economically made and distributed.

Of course when people install Diesel engines they burn their bridges behind them as far as the use of coal is concerned, and this demand for Diesel oil must be met, unless Diesel engines are discarded.

Some Products at a Loss

Unless restricted by law, the refiner is likely to work up his crude petroleum into products which will bring him the largest net return, with the exception that it is generally found necessary to supply customers with some products at a loss in order to maintain their patronage for other products in which there is a profit.

Although I have mentioned the possibility of legal prescription as to the products to be made and not to be made from crude oil, you doubtless appreciate the danger of attempting to change by fiat the natural course of economic development, and the automatic adjustment to each other for supply and demand.

And now as to the other branch of my subject: The possible changes in marketing practices.

There have been many changes in marketing practices. These have been brought about by the severe competition among the factors in the industry. This same cause will doubtless lead to further changes in such practices in the future. Just as those changes which have been made have had the effect to better the service and lessen the price to the consumer, it is fair to assume that the future changes will also accomplish this same purpose, but I can not see that these changes in marketing practices will tend to accomplish the result of conservation of petroleum which the commission is now considering.

COOPERATION WITHIN THE INDUSTRY MOST EFFECTIVE FOR CONSERVATION

By Thomas A. O'Donnell*

It is my judgment that the greatest practical results can be obtained by organized efforts within the industry to bring about neighborly cooperation in reducing waste wherever it exists and promoting greater knowledge in better methods for a maximum recovery. There is such a wide range of abstract problems involved in the production of oil that no hard and fast rules could be devised which would be practical in all parts of the country. Nearly every pool or district has local problems. What would be practical in one would prove quite wasteful in another.

More has been done in the last 8 years in the petroleum industry by cooperation than during the preceding 50. This was brought about by problems created by the war and the wonderful leadership of the late A. C. Bedford.

As an illustration of the use of this American Petroleum Institute in bringing about volunteer action to accomplish a useful purpose, we have for 3 years been dealing with the problems of standardization throughout the oil fields. Some of the ablest men in the industry have given freely of their time and talent and have finally solved many problems, saving many, many millions of dollars every year in the field cost of the production of oil.

During the greatest activity of a disastrous fire occurred, which called the attention to fire hazards around Los Angeles Harbor. All kinds of drastic legislation and impractical rules and regulations destructive to the industry were proposed. The oil companies immediately appointed their best engineers as a committee with full authority to carry into execution any necessary improvements. Better results were accomplished by this cooperative effort in a few months than could have been accomplished in years of effort by rigid legislation and regulation, which would probably have resulted in many impractical requirements.

Much has been done dealing with explosives and transportation problems through cooperative efforts. At present there is a nation-wide movement within the industry, dealing with the greatest of all conservation movements—human life.

Organization Suggested

I do not agree with some of the charges and exaggerated statements concerning reckless waste. Despite the rapid development of the industry and the great demands upon it, remarkable improvements have occurred. Only a few years ago no use was made of the gasoline now recovered from natural gas.

Through the use of gas traps where high pressures are involved, closed tanks and the prevention of agitation in the open air, millions of barrels of crude oil are being saved. I recognize there are many isolated instances where a preventable waste is occurring, and that in many districts of the country poorly financed or badly managed companies are slow to apply improved methods. However, I am convinced that a nation-wide, organized, cooperative effort for preventing waste and improving methods of recovery would be of tremendous importance, if such effort had the proper leadership and background to arouse general interest. I recommend if you find the facts justify, that you say to the American petroleum industry as a whole, first: That conservation and the prevention of waste of the petroleum resources of the

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*Before Federal Oil Conservation Board, Washington.

FISHER
DEPENDABLE SPECIALTIES

FISHER LIQUID LEVEL CONTROLLER
Type 227A
For use on stills, absorber towers, closed tanks or receivers, or on pipe line to control flow of liquid. Consists of float cage with seamless copper ball.

FISHER DIAPHRAGM ACTUATED RELIEF VALVE
Type 505
For use on weathering tanks. Iron body suitable for 125 lbs. pressure. Inner valve is of bronze—held closed by spring tension. Diaphragm construction assures perfect alignment at all times.

Fisher Specialties Ring True

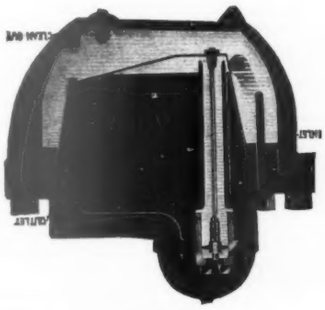
Tap any steel casting used in the Fisher Plant — it rings like Venetian Glass.

Electric Steel—the best that Milwaukee affords — patterns of Mahogany and Walnut—nothing is too expensive if it secures the objects we are after — accuracy and dependability.

This policy, faithfully carried out for many years, has made guarantees on Fisher products superfluous.

The name of Fisher on a governor or steam trap is a guarantee in itself.

Make Fisher Specialties a part of your next specifications.



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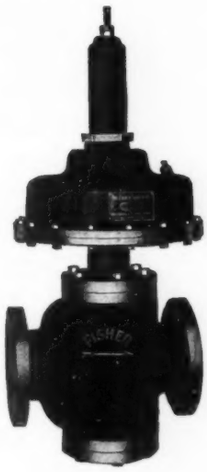

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Says Law on Oil Is Premium on Waste

Earl Oliver Attacks Concept of Reduction of Petroleum to Possession Before It Is Considered Property and Urges Amendment

By Earl Oliver*

The problems involved extend far beyond the petroleum industry. They dovetail in with our entire politico-economic structure. A comprehensive knowledge of that structure is perhaps more important to the proper solution than is an intimate knowledge of the petroleum industry—in fact the latter is about the simplest part. It therefore promises well that the leaders of the industry have engaged as an adviser an individual whose recognition for his ability to think soundly on politico-economic questions is equaled only by its confidence. Other indications are not lacking that the leaders desire open minds, open forums, and a thorough going cooperation not only within the industry, but with those agencies outside entitled to a voice. If the industry's problems are studied in this spirit we may confidently look forward to a most constructive year.

Your attention is first called to certain general principles of political economy stated many years ago as follows:

"No question is more difficult in the whole range of ethics of social life than the modern doctrine of vested interests. It is obvious if we were to extend the principles some persons have laid down we must persist, even in the near prospect of national ruin in continuing what we have once allowed. Any student of the economic laws which can be found on the historical statute book, will constantly find that the wisdom of one generation is the folly of another." (Rogers).

"* * * With the unwise practices of men as with the convulsions and disasters of nature the longer they remain unrepaired the greater become the obstacles to repairing them, arising from the aftergrowths which would have to be torn up or broken through. * * * A bad law or usage is not one had act in the remote past, but a perpetual repetition of bad acts, as long as the law or usage lasts." (Mills).

All that which I have just stated are quotations from two eminent English economists. The first by James E. Thorold Rogers is from his "Economic Interpretation of History," lectures delivered at Oxford some 38 years ago. The last is from John Stuart Mills' "Principles of Political Economy," written 75 years ago. Of course the oil industry was not in the minds of either when the statements quoted were made, and yet they are peculiarly applicable to the present situation in that industry.

Ownership of Oil

We find the instability feature of the petroleum industry, so far as human agency was involved, had its inception in 1875, when a Pennsylvania jurist initiated the idea that soon became crystallized into a principle of law, that ownership to oil and gas becomes vested by the act of reduction to possession, as distinguished from ownership in place that characterizes most other types of property.

Petroleum was of such nature and character, and found under such peculiar conditions as to make difficult application to it of the unusual type of ownership characteristic of private property generally. The Pennsylvania jurist, called upon to make a decision on a point on which there was no precedent, fancying he noted some resemblance between its actions and those of wild game, made mention of that resemblance. Other courts being struck by the analogy enlarged upon it and gradually impressed upon oil and gas the existing principles of the law of wild game so far as it was possible for analogy to run.

Now the rapid and wasteful depletion of game in every country as population becomes dense is so well known as to need no discussion. We know how fish, deer, bear and buffalo have disappeared. We know their utter annihilation would have occurred except that Government stepped in and laid down minute directions, setting forth the manner, time and quantity under which the little remaining in each case might be appropriated. It even specified the uses to which that little amount appropriated might be put. These minute directions of Government were sufferable only in that they applied to things not of great importance to the welfare of the citizen. They would, however, not be sufferable if applied to a great industry.

Preservation of Property

One need be no profound student of political economy to understand that permanence and preservation of the material things of life that we constantly see about us and that are collectively known as wealth or property are vitally dependent upon the character of laws under which ownership is determined. If the law of ownership to a material thing is certain, positive, and permanent, the individual who owns it will protect it, conserve it, and utilize it to its maximum capacity knowing that in the meantime delay on his part in doing these things will not deprive him of such enjoyment when and however he may deem most desirable. Such certainty means the most complete and efficient utilization and improvement on his part which, happily, is likewise most beneficial in most instances to society generally. On the other hand, if his character of ownership is such that it imposes upon him great burdens to maintain, and finally complete uncertainty as to whether or not he shall enjoy it at all, this uncertainty and burden becomes a pressure upon him to utilize it immediately and secure what enjoyment may come to him out of it, irrespective as to whether that enjoyment is small in comparison with what it might be if he could afford to delay enjoyment. He utilizes it immediately and inefficiently. Unhappily, inefficient utilization on his part results in a like loss to society in general.

An Abortive Principle

This principle of law initiated then in 1875, was an abortive principle conceived by an opportunist. It violated centuries of experience as to the type of ownership to property that best serves mankind. It conflicted with economic law. It put a premium upon wastefulness rather than efficiency. It was a black sheep among legal principles. It did not harmonize with existing institutions. It did not utilize the predominating traits of human nature without which no law can be economically successful. However, for a time it persisted. Out of it grew practices, usages and customs of the industry. Finally courts began to recognize its inconsistency and gradually broke away from it until now of the great number of courts that have passed upon it, all but those four States and the Federal Courts have repudiated it.

The Supreme Court of Arkansas in a recent decision stated the present tendency of the law to be: "According to many writers on this subject, the view most generally entertained by geologists at present is that gas and oil are not of a vagrant character and do not migrate, but maintain their situs until they are drawn out or expel themselves by pressure through artificial openings in the surface, and that tendency of later decisions is to hold that oil and gas while in place and before drawn out by artificial openings are as much a part of the realty as fixed minerals, such as coal or iron." This appears to substantially set forth the position also of Kansas, Michigan, Minnesota, Oklahoma, Tennessee, Texas and West Virginia, and probably Louisiana. However, the changed attitude has not yet made itself felt in the practices of the industry, nor in fact has it been carried to its logical conclusions by the courts themselves. If full force were given to the principle that ownership exists to oil in place, then it follows courts and legislatures would do those things necessary to enable the owner to reasonably enjoy that which he owns—which of necessity would restrict one from unreasonable enjoyment, so that all might have a reasonable measure of enjoyment.

Confusion of Goods

There is a well-known recognized body of law governing the question of confusion of goods. The courts do not refuse justice merely because they can not give each man his particular ear of corn, bale of cotton, bushel of potatoes, or mule, or piece of lumber, but they do attempt to do those things necessary to give substantial justice and courts have wide discretion as to what means shall be used to bring about substantial justice. They have no means of determining whether the oil that comes out through "A's" wells was originally located under "A's" land but they do know whether the manner of development followed by "A" is such as a reasonable man would use if he were not also attempting to extract oil from under the lands of "B."

Certain practices and usages of the industry growing out of it remain as an aftergrowth that is difficult to break through. Men have experienced them so long they now claim them as vested rights notwithstanding they are entirely inconsistent with underlying principles of the use and enjoyment of property that have persisted for ages and which are in fact the basic principles on which organized society is founded. These errors die hard. In some cases they have been maintained as a continuity of policy. They have even been defended by bold and baseless assertions, but they now give promise of becoming the subject of parliamentary compromise and I have no doubt they will at least be swept away and repudiated. Obviously the wisdom of 1875, is become the folly of this generation.

It is not strange that economists 50 years ago could so exactly describe our present situation for it is but the operation of familiar economic principles applicable to all industries and all ages. If the oil industry that has no precedents of its own to guide it will but study the history of other industries its own way will be made clear.

Government Responsible

The oil industry is unstable. It is wasteful. But these admissions should cause no embarrassment to the petroleum industry, unless, of course, it refuses to help free the industry of them. The practices it employs are the natural consequence of the type of ownership Government foisted upon it. If embarrassment exists anywhere it should be that of Government, not industry. But the agencies of Government responsible for it have long passed away and it is but fitting their successors of this day, Federal or State, both through courts and legislatures, should endeavor to remedy the errors of their predecessors. In fact the aftergrowths of those errors can not be broken through without the cooperation of Government and industry, and this Federal Oil Board is a most fitting tribunal to determine the way Government in its several branches, State and Federal, can best function in cooperating with the industry to bring about a correction of those errors.

The direct effect of the practices that have grown out of the old Pennsylvania principles and which practices yet persist is that first they operate to prevent larger known reserves and second, they

(Continued on Page 174)

*Before Federal Oil Conservation Board, Washington.

OIL SUPPLY FOR CENTURIES AND RESTRICTIONS MEAN HIGHER COST

By E. W. Marland*
President Marland Oil Co.

The question of the adequacy of our supply of oil to meet future demand and of the necessity of conservation, is not a new one. It has been with us from the infancy of the industry and will probably be with us a hundred years from now, if science, before that time, has not harnessed some natural energy for the use of man and made the internal combustion engine obsolete.

I am not one of those who believe there is any necessity for conservation, because I believe there is a sufficent supply of oil to meet the demand for internal combustion fuel and lubrication for centuries to come, probably as long as our civilization and its necessities for petroleum shall exist.

Having heard so much talk of conservation, naturally, I have considered how conservation might be effected, if, and when, necessary, and I could not avoid the conclusion that conservation must take the form of restricted production and restricted consumption.

To me, such restriction seems possible only through either Government ownership or monopolistic control. The first, of course, only possible after the taking over of our oil properties by the Government by due process of law. The second course only possible after the repeal of all of our anti-trust laws.

From the public's point of view it would seem to me that either of these courses would be highly undesirable, and, since the object sought by those who seem to think conservation necessary appears to be that of restricting consumption to essential uses, it is my belief it might be less objectionable to the public to legislate directly against consumption for non-essential uses, rather than to limit consumption by restricting production.

Cheap Gasoline Benefits

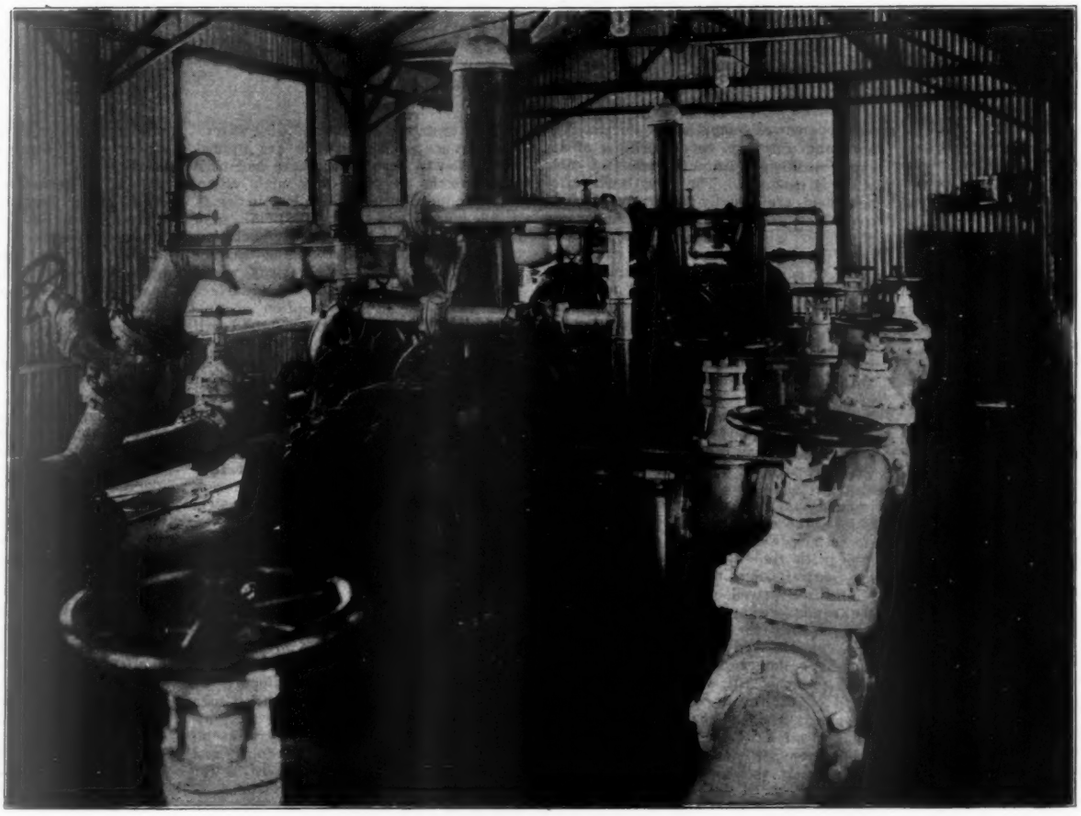
Overproduction has always caused oil to be cheap and is responsible for the cheapness of gasoline and lubricating oils.

Restricting production would mean the end of cheap oil and cheap gasoline.

(Continued on Page 166)

*Before Federal Oil Conservation Board, Washington.

ROOTS



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Economic Loss in Producing Industry

Dissipation of Gas Pressure and Failure to Recover More Oil, Overdrilling and Improper Spacing, Cited as Industrial Wastes

By Lester C. Uren*
University of California

It has been suggested that wherever possible, remedial measures be outlined which offer promise of increasing efficiency and of reducing the losses resulting in present-day petrroleum producing practice.

The losses incurred through the use of the methods now commonly employed, are of two types: first, oil losses; and secondly, capital losses. Both represent economic loss properly chargeable to the industry, and so far as they may be avoided by improvements or changes they represent industrial waste. It is proposed to first consider the practices which result in losses of oil, and then the more important capital losses.

Most of us will agree that losses of crude petroleum after the product reaches the surface are not excessive, considering the low value attached to the product, the great volume handled and the widely scattered points of production. The important losses are underground losses. Such losses are deceptive in that they are not apparent from surface inspection, and the oil producer may actually be losing upwards of 75 per cent of the oil within his property boundaries without becoming aware of it. We are not here concerned with the losses of one operator of a group to his neighbors by failure to keep pace with surrounding developments, but rather, with the over-all loss of oil left in the sands unrecovered.

Getting Less Than Fourth of Oil

It is now generally admitted that the present commonly-used methods are securing less than 25 per cent of the oil actually present in the reservoir sands. Some authorities have placed the extraction as low as 10 or 15 per cent in certain fields. Some believe the remaining 75 per cent or more that we fail to produce, is not lost but may yet be recovered by more efficient processes yet to be developed. While it is true that processes are known—such as water flooding and the application of compressed air—which may be applied when the lower limit of production by flowing and pumping is reached, there is no assurance that such processes are of universal application. Furthermore, present-day operations are often conducted in a way that leaves the productive sands flooded with water or sealed with solidified asphalt or wax, so the remaining oil will not be producible by any known process of recovery.

This loss is probably the most serious with which the present-day industry may be charged, because it is largely remediable through the use of more efficient methods of recovery already known. These methods, however, are not used because the highly competitive system of production does not permit of the production of anything but the cheapest oil, necessitating the use of methods which give little regard to ultimate recovery.

There is ample evidence indicating that if the gas associated with the petroleum in our fields were conserved, and elevated gas pressure maintained in the oil sands during their productive life, the ultimate production could be greatly increased. It seems probable we could increase the percentage of ultimate recovery and greatly extend the radius of drainage of wells if we were to drill them to larger diameter or excavate cavities about them within the oil sands.

Lack of Uniformity

Much of the oil left in the sands as unrecoverable by present-day methods, is lost through lack of uniformity in field development of competing producers. For maximum recovery, timely drilling of all areas within gas-drainage radius of each other is essential. The early wells in a new field are usually far more productive, because they have the advantage of higher gas pressure. They secure their production, however, only at the expense of gas from oil beyond oil-drainage radius, thus leaving undrilled areas in their vicinity gas-drained, so that later-drilled wells recover only a fraction of what they might have secured if drilled before gas drainage occurred.

Data gathered some years ago in connection with a study of the California Naval Reserves, indicated that delay of only a single year in ddrilling locations with gas-drainage radius of earlier drilled wells, means, in many cases, a loss of upwards of 50 per cent of the potential production. Delay of several years often reduces the ultimate production to as little as 25 per cent of what it might have been with timely drilling. These losses are entirely due to gas drainage, the oil being deprived of its gas and left in the sands without motivating force to bring it into the wells.

Delayed Development

I have determined the ultimate loss for a group of 101 wells in the Coalinga Field of California, due to delayed development, and find that about 26,000,000 bbls. of oil have been left in the sands about these wells as a result of untimely drilling. If this group of wells can be considered as a fair indication of the average well in the Coalinga Field, there has been a total loss for the field of about 360,000,000 bbls.; and if all the wells within the California fields had the same ratio of loss to yield, the loss, due to lack of timeliness in development, would be 2,700,000,000 bbls. No high degree of accuracy can be claimed for these figures, but they are at least indicative of an economic loss of great magnitude. They could be greatly reduced by better coordination of the development program, so that all wells would receive the greatest possible benefits of the higher gas pressure.

Important underground losses of petroleum also result through failure to adopt a uniform policy of water exclusion and a proper system of control of edge-water encroachment. Many wells are prematurely flooded before they have had time to secure the oil which they might otherwise produce. Much oil is lost in lenses of slow-draining, fine-grained oil sand that becomes inundated by encroachment of water through surrounding coarser sand channels. The only remedy would seem to lie in closer study of subsurface conditions and in the adoption of uniform methods of water exclusion and well control.

So much for the underground oil losses that result under the present system of petroleum production. It is apparent that our production methods are notably inefficient and are productive of important economic loss. The losses may, in part, be properly termed waste, in that they would be partially avoidable if different methods of oil production, already known, could be adopted.

Capital Losses

Turning next to the capital losses which result in our present system of petroleum production, we are again confronted with conditions which are productive of serious economic waste. There are those who argue that if oil producers choose to drill more wells than productive acreage will properly support, or produce more oil than the market can absorb, or otherwise mismanage their affairs, it is their own business; that oil is not actually wasted by so doing, and that the consumer should rejoice in the low oil prices resulting therefrom. It should be recognized, however, that in a broad view, the losses of an industry must ultimately be paid by the consumer. To perpetuate itself, any industry must, in the main, be profitable, and over-all profits can not be determined without taking losses into account. Capital losses in the oil-producing industry are therefore conducive, in the last analysis, to higher oil prices.

Inefficiency in this respect, is also productive of higher production costs, and higher production costs compel a lower percentage recovery of oil. Efficiency means lower production costs, which permit of operating wells for lower daily yields, resulting in greater ultimate recovery of oil from our productive sands. The efficiency of the producer is a matter of concern from the conservation standpoint.

Economic Spacing

One of the most serious sources of capital waste is that from over-drilling and improper spacing of wells. The industry has not yet developed a method of determining economic spacing. Practice in spacing and arrangement of wells varies widely, and in most cases, their locations are determined by property boundaries and competitive conditions rather than by the principles of drainage and economics.

In almost any oil field in the United States, important capital losses due to lack of uniformity in well spacing, may be demonstrated, but in the so-called "town-lot" fields the situation is particularly aggravated. In the Santa Fe Springs Field the productive area of which includes only 1,400 acres, there are 45 different oil companies operating. Under the highly competitive conditions prevailing, they have drilled some 340 more wells than the field should properly support: wells drilled at an average cost of $100,000, or a total of about $34,000,000. In their competition for early production they increased the monthly production from 1 to 10,000,000 bbls. in 12 months, and as a result, 96,000,000 bbls. of oil were sold for $1.35 per barrel less than the prevailing market price just before and since the peak of production passed: a further loss to the industry of $130,000,000.

It is cheaper to produce oil on large tracts under unified control than on small tracts under separate management. It has been estimated that the average cost of oil production by the many different companies operating in the Santa Fe Springs Field, has been about 40 cents higher than it would have been if the entire field could have been operated under a single management. This represents an additional loss on the 136,000,000 bbls. already produced in this field of about $54,000,000. The total of these various losses that have occurred in the development of the Santa Fe Springs Field, is about $218,000,000.

Upper Sands Flooded

In the scramble for early flush production from the deeper zone, two upper zones were only partially depleted, but gas pressures were promptly dissipated and the upper sands are now said to be flooded in many localities. Had the three oil zones been drained one at a time, beginning with the uppermost, and if gas pressure had been preserved by proper gas conservation, it is probable this field would have produced at least twice as much oil as it is likely to yield by present methods. We cannot evaluate this loss in dollars, but it is of the order of hundreds of millions.

I have mentioned the Santa Fe Springs Field as one which exemplifies the type of economic waste with which we are concerned, but we find the same inefficiencies represented in greater or less degree in nearly every field. The cause of such inefficiency is well understood: "competition." As long as the competitive system prevails, we must expect these losses. The American public may not like the idea of integration in industry, and it may be contrary to present anti-trust laws, but real conservation of our petroleum resources is possible by consolidation of producing interests, the ideal organization being attained only when each producing structure is controlled by a single operating unit or an

(Continued on Page 205)

*Before Federal Oil Conservation Board, Washington, D. C.

MORE TO FEAR FROM COMPETITION THAN FROM EXHAUSTION OF OIL

J. Edgar Pew*
President, Sun Oil Co.

The methods of finding and handling oil and its products, from the drilling of the wells to the delivery to the consumer, have been steadily improved, until today the oil industry as it is operated, is a highly specialized one, and is probably as scientific in its operations as is any great industry. Improvements are always being developed. Research within the industry is being conducted in all branches of the oil industry and on a scale little known to the public. Millions of dollars are annually being expended by the larger units. Within 3 months the A. P. I. has received $500,000 to be spent at the rate of $100,000 per year on research work for the benefit of the entire industry. This all benefits the public, dependent on our products.

New developments in the science of discovering crude oil, during the past 5 years have done more to enable this industry to supply the present great demand for its products than any other factor. New developments in manufacturing process have added greatly to these results.

We are now producing large quantities of crude oil at depths below 5,500 feet, and some oil from as deep as 7,200 feet. The experienced oil producers, backed by their geologists' opinions, believe that we may produce oil from as great a depth as 10,000 feet and from even greater depths. New and better equipment and methods of drilling and producing oil make such predictions seem possible.

The oil industry has always had a difficult task, that of finding oil in quantities that were not, and in places where it did not exist, according to the opinions of those who were, at least from the

(Continued on Page 168)

*Before Federal Oil Conservation Board, Washington.

Graphic Analysis of the Oil Industry

Wells Drilled and Crude Oil Produced, From The Oil and Gas Journal. All Other Data From the U. S. Bureau of Mines

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

The current condition of the oil industry is determined, almost entirely, by a few basic factors: The number of new wells drilled—the amount of new production obtained—the amount of crude oil run to stills—and the amount of crude oil and refined products in storage.

Price—the barometer of current conditions—is merely "the hands of the clock," of which these four factors are "the works."

And, as new wells, new oil, refinery runs and storage goes, so goes the industry.

The first three of the accompanying graphs are compiled from the weekly and monthly reports of The Oil and Gas Journal—and make available, at the earliest possible moment, two vital and dependable pieces of information—new operations and new production.

Importance of Mid-Continent

Comparing Graph 2 with Graph 1 emphasizes the importance of the Mid-Continent as a source of "new oil." Our present consumption of over 800,000,000 bbls. of crude a year, and the annual depletion of probably 200,000,000 bbls. a year, brings into the foreground the pressing necessity for finding "new" production.

And the success of this search, in the Mid-Continent as compared with the other producing areas, is clearly indicated by comparing the dotted lines in Graphs 1 and 2.

Line 2 on Graph 3 also shows that, in 1925, the Mid-Continent produced more crude oil, every month, than all of the other fields in the United States, combined. The "spread" started in April—was widest in May—narrowed down for four months—and run about constant the last three months of the year. Line 7 shows Arkansas as the spectacular State last year, her peak in May being almost wholly responsible for the peak in Line 2, as well as in Line 1.

Refinery Runs

Refinery runs (Graph 4) swung between about 53,000,000 and 67,000,000 bbls. a month. Gasoline stocks stood at about 1,700,000,000 gallons during March, April, May and June—dropped for three months—and have been increasing beginning with last October.

For the entire year 1925 our demand for gasoline (production plus imports) was 96.8 per cent of our supply (consumption plus exports). The ebb and flow of supply and demand are clearly shown by Lines 4 and 5.

Graph 5 clearly visualizes the basic conditions that resulted in the recent advance in the price of crude oil. Last August crude oil at refineries (Line 2) plunged below the zero line—and remained below until December, when storage was increased 13,000 bbls. Refined products at refineries (Line 3) plunged below the zero line in September—and were still below in December. Except for small withdrawals in January and June, pipe line and tank farm stocks (dotted line) were added to every other month in 1925, except December, when over 4,000,000 bbls. were drawn from storage.

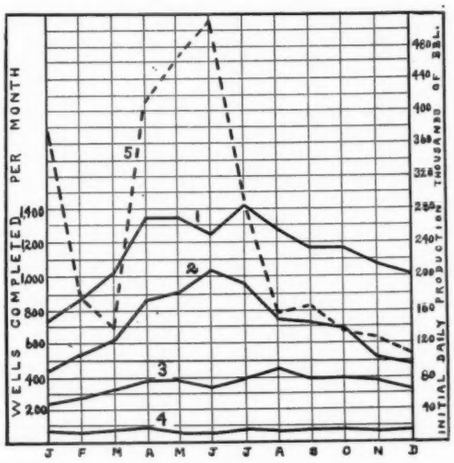
During practically all of the first seven months of the year these three factors (pipe line and tank farm stocks, crude oil at refineries and refined products at refineries) were above the zero line—their stocks were increasing.

During the latter part of the year two of them plunged below the zero line—while the largest one (pipe line and tank farm storage) remained above the line. But in December, when all three factors got below the zero line, the price of crude oil went up.

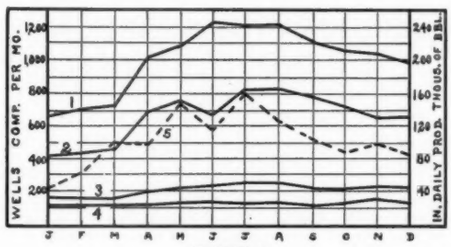
In the area east of California (Graph 6) crude oil storage has been on the "down" swing (Line 2)—in California it has been on the "up" swing (Lines 4 and 5). Crude oil at refineries east of California (Line 6) has also decreased.

It is obvious, therefore, that in the area east of California the storage situation for both crude and refined was materially better at the close of 1925—and it is equally obvious that California did not fare so well.

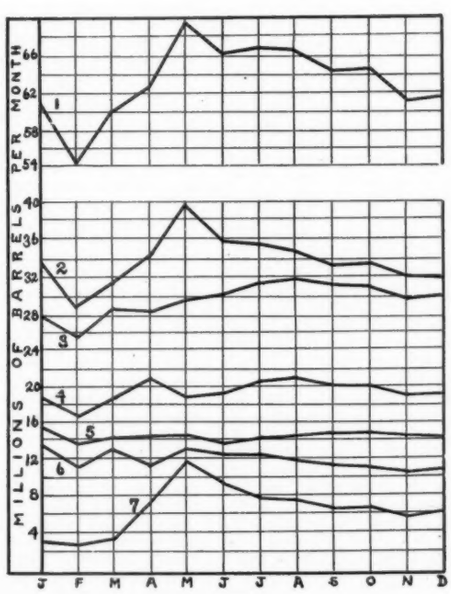
Probably nothing could offer more concrete proof of the inescapable operation of the law of supply and demand in the oil industry, than this series of graphs. The four basic factors stand out—new operations—new oil—runs to stills—and storage. They are "the works." And, as they go, so goes the industry.



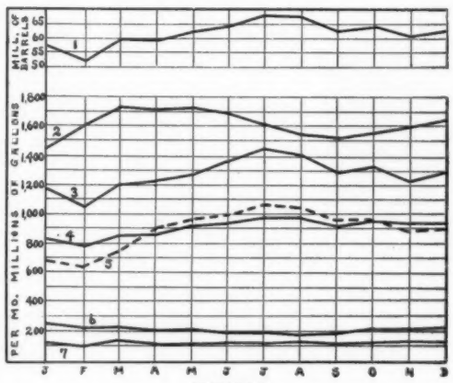
GRAPH 1
Wells completed in the Mid-Continent. 1—Total wells completed. 2—Oil wells. 3—Dry holes. 4—Gas wells. 5—Initial daily production (read scale, right-hand side).



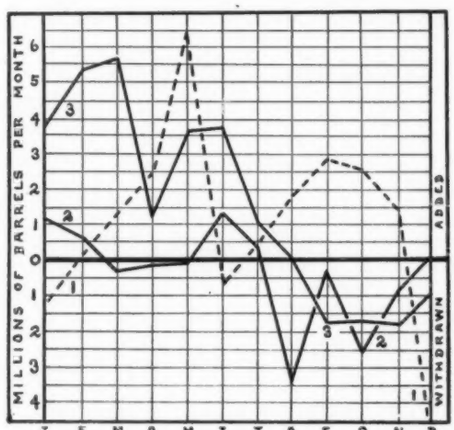
GRAPH 2
Wells completed in the United States outside of the Mid-Continent. 1—Total wells completed. 2—Oil wells. 3—Dry holes. 4—Gas wells. 5—Initial daily production (scale on right side).



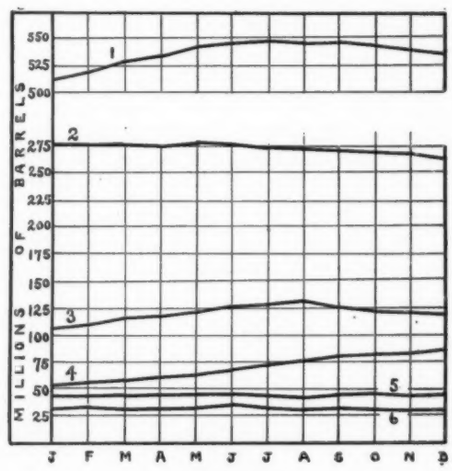
GRAPH 3
Production of crude oil. 1—United States. 2—Mid-Continent. 3—United States outside of Mid-Continent. 4—California. 5—Oklahoma. 6—Texas. 7—Arkansas



GRAPH 4
Refinery operations. 1—Crude oil run to stills. 2—Gasoline stocks. 3—Fuel oil produced. 4—Gasoline supply (production plus imports). 5—Gasoline demand (domestic consumption plus exports). 6—Kerosene produced. 7—Lubricating oil produced.



GRAPH 5
Additions to and withdrawals from stocks. 1—pipe line and tank farm. 2—Crude oil at refineries. 3—Refined stocks at refineries.



GRAPH 6
Petroleum stocks. 1—Total stocks of crude and refined for entire United States. 2—Pipe line and tank farm stocks east of California. 3—Refined products at refineries. 4—Heavy crude oil and fuel oil in storage in California. 5—Light oil in storage in California. 6—Crude oil at refineries east of California.

Mexico 23,131,044 Barrels Less, 1925

Decline for Year Was Mainly in Heavy Oil District Though Light Oil Production Was Slightly Smaller Owing to Restricted Output

By George Blardone

TAMPICO, Mex., Feb. 13.—Production of petroleum in Mexico during 1925 can be placed at 115,940,839 bbls. As the production for 1924, according to the calculations of this bureau, was 139,071,883 bbls., the decline during 1925 can be placed at 23,131,044 bbls. This loss can be charged to the northern fields, or heavy oil district. The south fields, or light oil district, showed a slight loss in 1925, compared with 1924, but there were wells shut in in the south fields which could easily have shown a gain over 1924 if the company owning them desired the production. In a measure this was also true of the northern fields, the same company group considered, (Pan American Eastern), and, as 1925 drew to a close, National Lines of Railways had more oil than it had facilities to move in the northern fields also. Apart from these two exceptions the production figures can be considered as the utmost that could be obtained from the wells of all other operators, companies or individuals.

The production by districts follows:

	Barrels
Northern Fields	78,290,533
Southern Fields	37,402,026
Isthmus of Tehuantepec	248,280
Total, 1925	115,940,839
Total, 1924	139,071,883
Decrease, 1925	23,131,044

Distribution in 1925

The distribution of production for the year comes under the headings of exportations, domestic consumption, field and refinery uses and losses, and, in this instance, oil passed to storage. To the production of 115,940,839 bbls. can be added crude imports of 1,075,038 bbls., or a total subject to the distribution scrutiny of say, 117,015,877 bbls. In table form this distribution assumes the following aspect:

	Barrels
Visible Exports	96,953,207
Passed to Storage	2,394,432
Domestic consumption as outlined	17,668,238
Total (to balance)	117,015,877

In this table the domestic consumption, etc., appears rather high, but in the vessel shipments from the petroleum ports of primary clearance, Tampico, Tuxpam and Port Lobos, some 3,907,837 bbls. were cleared "coastwise." Much of this oil belongs in domestic consumption, but some of it, destined for the Mexican Eagle Oil Co.'s refinery at Minititlan, in the Isthmus of Tehuantepec, was unquestionably exported, but as such export figures are not available at this time, these shipments are perforce entered into the domestic consumption group. Such exports from the Isthmus refinery will automatically reduce domestic consumption in the above table, and increase actual exports. Say, perhaps 50 per cent of the coastwise movement eventually went to the export trade. However, insofar as the figures at the ports of primary clearance are concerned, the above table is correct.

Field Operations

If the production curve fell during 1925 it can hardly be chargeable to the drill for there were more holes finished in Mexico than the year preceding which had held the record in holes finished. The following table indicates the supremacy of the past year:

District—	Finished	Producers
Northern Fields	713	212
Southern Fields	73	29
Isthmus Tehuantepec	20	14
Total, 1925	806	255
Total, 1924	732	259
Difference	74	4

A glance will show the discrepancy between wells finishing in the pay and those that finished failures. In the "golden age" of petroleum in Mexico the scale was reversed, but, apparently, that is in the past. The trouble, too, with these pay completions of 1925 is that they did not display by any means the longevity that characterized wells of an earlier period, many, indeed going to water quickly, hence the downward curve of production figures despite active drilling. Then, too, practically all of the wells finishing in the pay were being drilled in old territory—territory either well drilled at a previous time and consequently subjected to heavy drains, or in territory being rapidly drilled up and subjected then—as now— to heavy draining. In fact there is not a really genuine wildcat among the list of pay completions in the tables set forth. Such wildcats as were drilled during the year, north or south, were failures.

Northern Fields

The greatest activity was of course in the northern fields, old Panuco, the Cacalilao, Corcovado and Ebano to speak generally. Operations in Corcovado are almost nil, only a few strings operating there. In Cacalilao operations have slackened down to a fairly negligible point. In the old Panuco interest revived during the year and there the independent operators and contractors and some major companies are busily engaged in combing around for "high spots"—and there has been some success attending them, too. The big wells, however, are coming in now in the Ebano sector, controlled entirely by Mexican Petroleum Co., (Pan American Eastern), and by National Lines of Railways, drilling on its right of way through this sector. To illustrate just how material these field operations between these two companies were during the year, Ebano's greatest producing year heretofore was in 1924 when it produced a little under 7,000,000 bbls. In 1925 the production credited there is over 17,000,000 bbls., of which over 15,000,000 can be credited to the Mexican Petroleum Co., the remainder belonging to the National Lines and many of the producing wells there were shut in especially the last half of the year.

Another development that an eye can be kept on is the operations of the Marland interests in the hacienda Limon, an enormous tract, lying south and west of the holdings referred to generally as Ebano. This interest has been going along slowly and while it finished nothing sensational during 1925 it did finish several nice small wells, and probably has a production of 10,000 bbls. It commenced exploiting part of its production through the Pan American Eastern pipe line system from Ebano in the summer of 1925. Here is much acreage to be tested by the drill, and it is off to itself so line drilling need not give the Marland interest much worry.

Among the Wildcats

The few genuine wildcats finished in the northern fields were all failures. The most notable of the genuine wildcats were a group of five tests drilled by International Petroleum Co. (Mexican Seaboard) in San Luis Potosi at a hacienda known as El Naranjo, northwest of the Ebano sector. Four dry holes and one salt water well are the result, thuogh gas gas showings were encountered, especially in the first test. The depths ranged from 2,500 to 2,610 feet, and all save one, were credited with finishing in the Tamasopa. Rich Mex Oil Co. drilled a test known as No. 1 Rosita north of the Tamesi River in the Altamira district which was a duster, finishing, it was reported, in the Alazan shales at 2,275 feet. This company, however, has another test around 2,000 feet at this writing in this district that is credited with interesting shows at this time. Mordelo Vincent drilled a test just north of Tampico at Laguna de la Puerta that finished in shales, a dry hole at 2,500 feet. In the Los Esteros, American International Fuel Co., finished six dry holes.

Coming south, Globe Petroleum Co., finished a big gasser that shows oil in the Quebrache, south of Topila in June at 2,940 feet. This is deep territory that shows much gas and, in most of its wells, water with the oil, but here it is that dehydration has been practiced with fair success by a dehydrating company. Yet farther south from Quebrache, bordering indeed on south fields' undefined boundaries, Cortez Oil Corp., finished a test in Cahuayotes at 3,440 feet, in white lime, that shows for a few barrels of high gravity oil, but the depth of holes in this vicinity (they have some others in the Largatero nearby) and the attendant cost naturally gives pause to further operations. Southwest of this place, in the Tanceme, International Petroleum Co., has a deep hole shut down for sometime at 4,380 feet, an evident failure.

South Fields

Operations during the year, with the exception of Huasteca Petroleum Co., in its Cerro Azul and Tierra Blanca tracts, were confined to some drilling here and there in old areas looking for "high spots" near wells that continued in the production column, etc. No big wells are specifically expected, although in one instance, (Mexican Eagle Oil Co.'s No. 24 Cerro Veijo), a 20,000-bbl. well came in in October. This does not apply to Huasteca's Tierra Blanca and Cerro Azul, in which a number of big producers were finished. This is the only company in the south fields that has closed in production for a reserve. Mexican Eagle finished one wildcat, (No. 2 Mecapepec) north of the old Furbero Pool, getting a dry hole at 3,455 feet. In the Furbero, on which the company again renewed its interest one pumper was finished and other smaller wells worked over so that production there went up to around 150,000 bbls. Mexican Sinclair Petroleum Corp., finished two deep tests in the San Isidro, southeast of Penn Mex Fuel Co.'s Alamo-Jardin holdings, both failures. Up in Laguna de Tamiahua, Agwi Companies drilled two more failures. In Granadilla, just north of the Cucharras

(Continued on Page 218)

NICHOLAS DEMANDS SEGREGATION OF INDUSTRY INTO DIVISIONS

By L. V. Nicholas*
President, National Petroleum Marketers Association

Let me begin by making what I consider a basic, fundamental statement of facts:

Crude oil in this country is not produced to meet increased demand, but rather oversupply has forced the industry to find new outlets through inferior uses that have built up a semblance of increased demand; and this, in my opinion, is a very dangerous situation, particularly if once an inferior use has become well established we increase our search for new crude to supply that inferior use.

Overproduction is the direct result of too much fresh capital being lured into the oil business as the result of loose accounting methods that give the efficiently organized and intelligently managed companies no visible advantage in their financial statements and balance sheets over their loosely managed, highly exploited competitors who possess original ideas in accounting.

If we are ever to adopt some system of conservation it can never properly be done until the entire oil industry has first been established on a properly segregated basis of operation, which—roughly—should be set up as producing, transporting, refining and distributing. The invested capital in each grouping should be carefully allocated, and each grouping or division should operate on a uniform accounting system.

May I quote, as nearly as possible, the exact words of one of the great nationally known oil executives, who said: "We do not particularly care in what branch of our operations a profit is made or in what branch a loss is sustained, so long as the consolidated balance sheet shows a proper and satisfactory profit."

No industry can practice even a mild form of conservation under such methods of accounting.

* * *

The consumer is not well served, first, because back in the mind of every oil man is the lurking fear of petroleum exhaustion, and yet our entire industrial machinery of gathering, transporting and distributing is geared to speed the day of possible exhaustion.

Our great pipe line, transit and storage facilities of the industry, while they perhaps may be termed common carriers and common storers or warehousers of petroleum products, are as a matter of fact so closely controlled and operated that the industry as a whole has no real means of giving expression to its views in terms of price or the volume of products it actually wants to throw on the market, and the general public is without any means whatsoever.

No study of our conservation problem will be complete until a thorough and exhaustive study has been made of the operations of the great pipe line and storage units whose methods, in my opinion, are the greatest factor in causing demoralizing overproduction. In no branch of the industry is there greater need for segregation of the different operations and separate and distinct capital setups and uniform cost accounting.

From the standpoint of efficiency in the physical collecting, transporting, refining and distributing of crude oil and its products, too high tribute can not, in my opinion, be paid to this industry.

I do not believe there is anyone in the oil industry, who is willing to face the facts, that does not have an underneath feeling that some form of conservation may possibly be good public policy. My personal leaning is based on the following observations:

An apparent fear in the minds of the larger organizations or units is that our supply is limited, this indication taking form in their continuous battle for the control of settled crude production and by their constant stimulation of the exploration and search for new production.

(Continued on Page 218)

*Before Federal Oil Conservation Board, Washington, D. C.

Big Results From Field Work in 1925

Increase in Wells Completed and in Average Initial Production per Well. Only One Other Year Showed Better General Record

By James McIntyre.

The record of completed work in the United States in 1925 shows some interesting and significant angles when compared to other years and to the average results for the past 10 years.

In the matter of completions, for example, 25,623 wells were finished in 1925, or 3,729 more than in 1924, and more or less in excess of the number completed in any year since 1920, when 33,972 were finished, and last year's completions, as compared with the average per year for the past 10 years, show an increase of 172. There were more completions in 1917, 1918, 1919 and 1920 than in 1925. The imperative need for oil for the purpose of carrying on the World War was responsible for the unusual amount of field work in three of those years and the consequent high price of crude which was maintained long after the Armistice had been declared was responsible for a constantly increasing number of drilling wells, which was in excess of 7,500, in the fall of 1920. Following the collapse of the crude market in 1921 the drop in field work was most pronounced and the number of completions in 1921 fell to 21,775, a falling off of 12,197 from the record of the year before and the lowest in the past 10 years.

There were 16,559 oil wells completed in the United States in 1925 or 1,788 more than in 1924, but this number compares unfavorably with the average for 10 years, which was 17,878 wells per year. Only in the years 1924 1923, and 1921, were there fewer oil wells completed in the past 10 years. The record of 1919 was 21,237 oil wells and 1920, 24,325 oil wells.

Initial production last year showed up to better advantage. The total for the year was 4,300,356 bbls, or 1,044,865 bbls. more than in 1924. In all the history of oil producing in the United States only one year, 1923, looms larger than 1925. In 1923, the total initial production was 6,105,100 bbls. Big fields in California, Oklahoma, Texas and Arkansas were at the height of their activity in that year. In the years of war-time operations American operators with all their tremendous effort could not get the results accomplished last year. In 1918 only 1,613,813 bbls. of initial production was brought to the surface and in 1919 3,554,486 bbls. In the whole 10 years the average per year was 3,250,347 bbls., or 1,150,109 bbls. less than in 1925.

Last year's record of average initial production per well was 260 bbls. This was bettered in 1923 when the average was 371 bbls., but in no other year. In the past 10 years the average was 182 bbls. ranging from 86 bbls. in 1916 upward to the peak record of 1923. In 1920 when more oil wells were completed than in any other year in history, the new oil wells averaged only 144 bbls., the first 24 hours, and in 1919 when the demand for oil by the United States Government and the Allied Powers was at its height the oil wells completed averaged 167 bbls. the first 24 hours.

This matter of greater average initial production per well offsets to a degree the increased average cost per well in these times of deep drilling, but how it affects the individual operator is another question, difficult to answer. Last year the two largest new fields, Smackover deep sand and the Wortham Field, were inexpensive. In either field wells could be drilled under $25,000 each. Both were rotary fields and the drilling was rapid and easy. The big average initial production of the Smackover deep sand wells made it possible for Arkansas to lead all States in this respect, its 1,202 oil wells completed last year averaging 1,071.7 bbls. the first 24 hours. In 1924 the average for Arkansas was 179.1 bbls. per well. In California, where drilling is deepest and most expensive, the average initial production in 1925 was 534.8 bbls. per well. In Oklahoma, where most of the wells must be drilled below 2,500 feet and from that down to over 4,000 feet, the average per well was 300 bbls. East Central Texas, in which the Wortham Pool lies, averaged 808.6 bbls. per well and of this Wortham, where the cost of drilling was low, provided most of the oil wells and was responsible altogether for the high production average. It will be seen by the above references that the largest wells last year were not drilled in the most expensive fields, but in Smackover and Wortham, some of the largest operators were also engaged in drilling in Texas and Oklahoma in the deep sand fields, so that they, at least, were favorably affected by the increased average production per well in its relation to increased average cost of drilling.

It was in the wildcat column that the high cost of failure stands out. There were 6,396 dry holes completed last year, the greatest number reported in any of the past 10 years, excepting 1920, when 7,375 failures were reported. The dry holes last year numbered 881 more than the average per year for the past 10 years. The cost of the average test well now is greater than it has ever been in the history of the oil business, but after fighting shy of the great financial hazard for years, oil operators accustomed themselves to the harsh fact that they were forced by circumstances to drill deep to find the lowest known oil sands in many of the most promising areas west of the Mississippi River, and mile-deep dry holes no longer cause the sensation they once did. Oklahoma, which led in the number of completed wells and the number of oil wells brought in, also led in the number of dry holes drilled. There were 1,578 failures in that State last year. North Central Texas had an even higher percentage of dry holes, its 1,466 failures representing 37.9 per cent of the whole number of completed wells, while Oklahoma's dry holes were 31.7 per cent of the number of wells completed. The high average and the large number of failures in both divisions are evidence of the activity of wildcatters in their endeavors to bring in new pools. The annual report for North Central Texas, elsewhere, shows that from one to 5 dry holes drilled in 30 "outside" counties, or, in other words, 50 wells drilled in 30 counties, and all of them dry. In Oklahoma, 62 tests were drilled in 26 "outside" counties and all were dry. This meant 100 per cent failure in an attempt to bring 56 counties in one State and a part of another into the oil column. In the whole United States the dry holes represented 25.3 per cent of the number of wells completed, while the average for the past 10 years has been 21.7 per cent.

Tremendous gas wells were completed in the Texas Panhandle; Smackover, Arkansas; Louisiana and Oklahoma. The number of gas wells completed in the United States last year was 2,330, which is above the average for the past 10 years of 2,125. The record of 1925 was higher than in any recent year excepting 1923, when 2,349 gassers were brought in. In 1916 only 1,761 gas wells were completed.

Arkansas' Big Influence

Considering average initial production per oil well in 1925 the importance of the Smackover deep sand area is made most evident. All told last year the average initial production was 260 bbls. per well as against 221 bbls. per well in 1924. Arkansas' average of 1,071.7 bbls. per well had most to do with the general increase last year, as with Arkansas eliminated in both years, the average would have been 196 bbls. per well in 1925 and 193 bbls. in 1924, indicating how closely the rest of the country came in the matter of results of the drill in both years. A study of the accompanying table will show that such prominent producing fields as Oklahoma, the combined North-Central and East-Central Texas Fields, Wyoming, North Louisiana and Southwest Texas all show that the wells completed last year averaged lower in first-day production than those completed in the same areas the year before. California and the Gulf Coast Fields showed an improvement over the results of the year before, and so did Kansas.

New Mexico enjoyed a much increased development, scoring a good average well production and a comparatively small percentage of failures, its record of 15 per cent of dry holes comparing favorably with the general average of 25.3 per cent. Utah came into the oil column last year with a 400-bbl. completion near Moab in the southeastern part of the State.

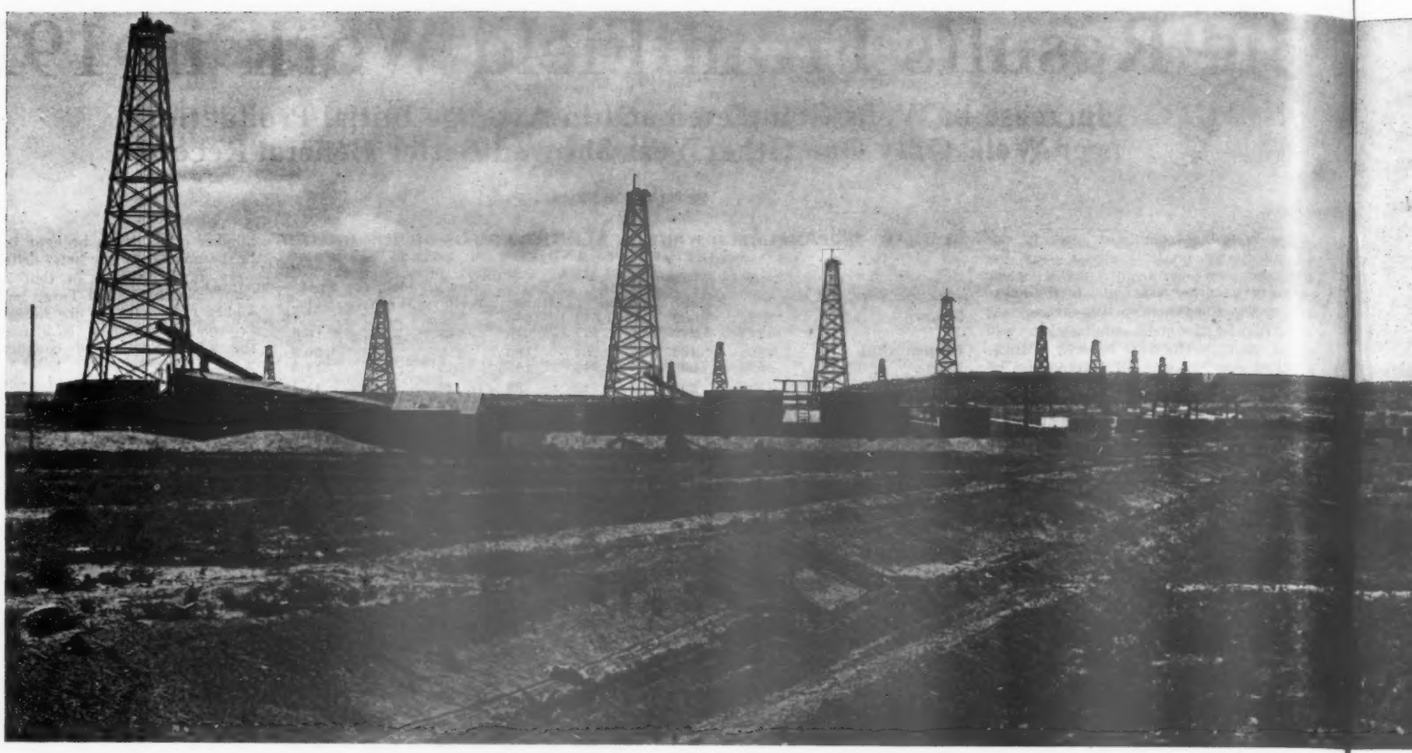
The Dim Future

The old year having ended the ancient industrial question of where do we go from here bobs up as it does in the early days of each year. Where will the industry go to find more oil? Already, early in 1926, the question is being partly answered. So far as California is concerned, The Oil and Gas Journal's correspondent in that field declares that California can increase its daily output by 75,000 bbls. without touching its shut-in production. It can be done, he says, by increased drilling in fields now under very

(Continued on Page 196)

SUMMARY OF COMPLETED WORK IN ALL THE FIELDS OF THE UNITED STATES IN 1925 AND 1924

		Comp.	Init'al Prod. Bbls.	Dry Holes	Gas Wells	Oil Wells	Av. Int. Prod. Bbls.
Eastern	1925	4,539	21,571	568	958	3,013	7.16
	1924	4,212	15,971	616	833	2,763	5.8
Central Ohio	1925	434	2,284	103	255	76	30.0
	1924	605	1,993	147	285	173	11.5
Lima	1925	627	7,710	89	26	512	15.1
	1924	592	9,745	63	42	487	20.0
Indiana	1925	128	1,600	41	5	82	19.5
	1924	150	3,445	46	11	93	37.0
Kentucky	1925	1,577	15,837	418	99	1,060	14.9
	1924	1,605	25,599	368	61	1,176	21.8
Tennessee	1925	58	4,221	35	4	19	222.3
	1924	28	1,199	19	6	3	400.0
Michigan	1925	2	60	.....	.....	2	30.0
	1924	.....	.....	.....	.....	.....	.....
Mississippi	1925	9	.....	9	.....	.....	.....
	1924	7	.....	6	1	.....	.....
Alabama	1925	.....	.....	.....	.....	.....	.....
	1924	1	.....	1	.....	.....	.....
Illinois	1925	245	10,759	70	5	170	62.2
	1924	179	5,079	55	2	122	41.6
Kansas	1925	2,003	207,880	636	86	1,281	162.3
	1924	1,125	92,268	396	79	650	141.9
Oklahoma	1925	4,978	879,558	1,578	471	2,929	300.0
	1924	4,814	1,211,446	1,308	468	3,038	398.7
N. C. Texas	1925	3,884	312,832	1,466	98	2,320	134.8
	1924	2,814	227,209	1,047	75	1,692	134.3
E. C. Texas	1925	683	368,725	208	19	456	808.6
	1924	444	275,545	149	6	289	953.1
Gulf Coast	1925	1,154	371,263	348	9	797	466.6
	1924	962	238,150	340	10	612	367.7
S. W. Texas	1925	709	121,322	140	55	514	236.2
	1924	446	213,460	71	47	286	746.2
North Louisiana	1925	412	21,594	125	85	202	106.9
	1924	423	66,917	113	164	146	458.3
Arkansas	1925	1,606	1,288,128	298	106	1,202	1,071.7
	1924	1,385	206,445	184	49	1,152	179.1
Montana	1925	395	54,283	127	14	254	213.7
	1924	170	27,744	58	8	104	266.7
Wyoming	1925	651	70,194	74	27	550	127.6
	1924	664	112,695	43	22	599	188.1
Colorado	1925	59	10,010	34	6	19	526.8
	1924	11	9,330	5	2	4	2,332.5
New Mexico	1925	180	23,156	27	1	152	152.4
	1924	13	2,307	2	.....	11	209.7
Utah	1925	4	400	2	1	1	400.0
	1924	6	.....	4	2	.....	.....
California	1925	1,286	506,969	338	.....	948	534.8
	1924	1,238	508,944	.....	.....	1,238	411.0
Total	1925	25,623	4,300,356	6,734	2,330	16,559	260.0
Total	1924	21,894	3,255,491	4,950	2,173	14,771	221.0
Difference		3,729	1,044,865	1,784	157	1,788	39.0
Total	1923	24,438	6,105,100	5,883	2,349	16,206	371.0
Total	1922	24,658	4,226,119	5,329	2,011	17,318	244.0
Total	1921	21,775	2,827,809	5,013	2,135	14,627	193.0
Total	1920	33,972	3,508,100	7,375	2,272	24,325	144.0
Total	1919	29,070	3,554,486	5,756	2,077	21,237	167.0
Total	1918	25,523	1,613,813	5,733	2,225	17,565	92.0
Total	1917	23,104	1,511,028	4,718	1,916	17,470	92.0
Total	1916	24,453	1,601,170	3,993	1,761	18,699	86.0
Total fo years		254,510	32,503,472	55,484	21,249	178,777	.....
Average		25,451	3,250,347	5,548	2,125	17,878	182.0

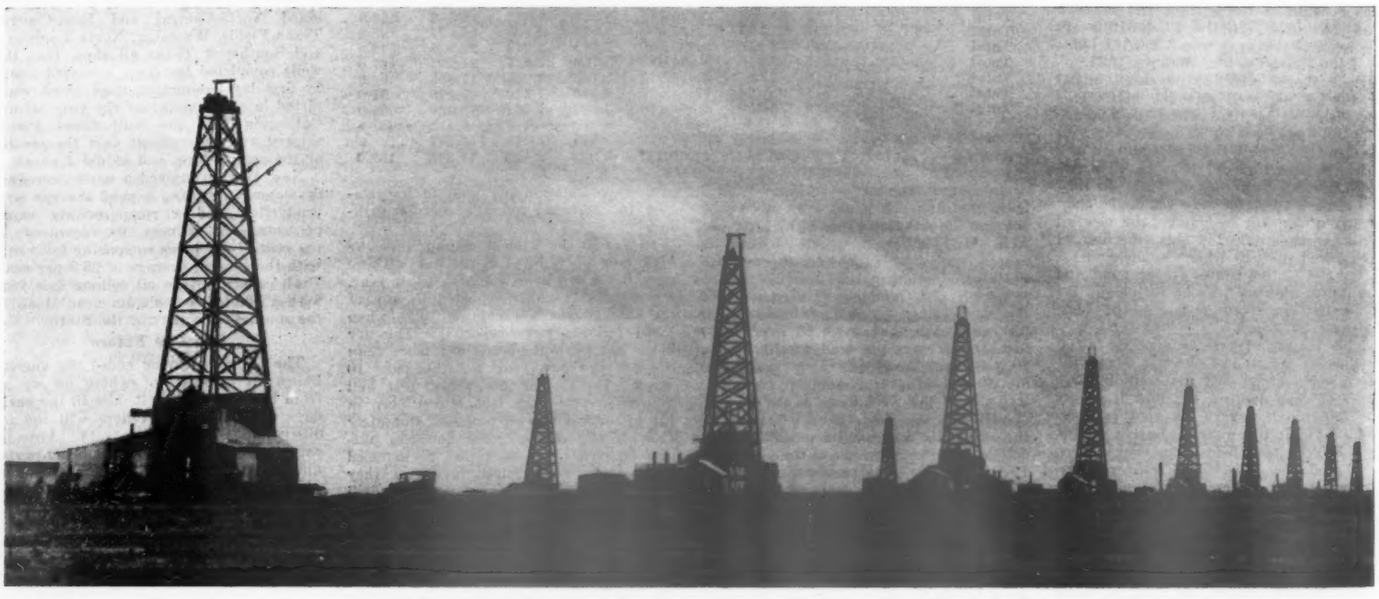


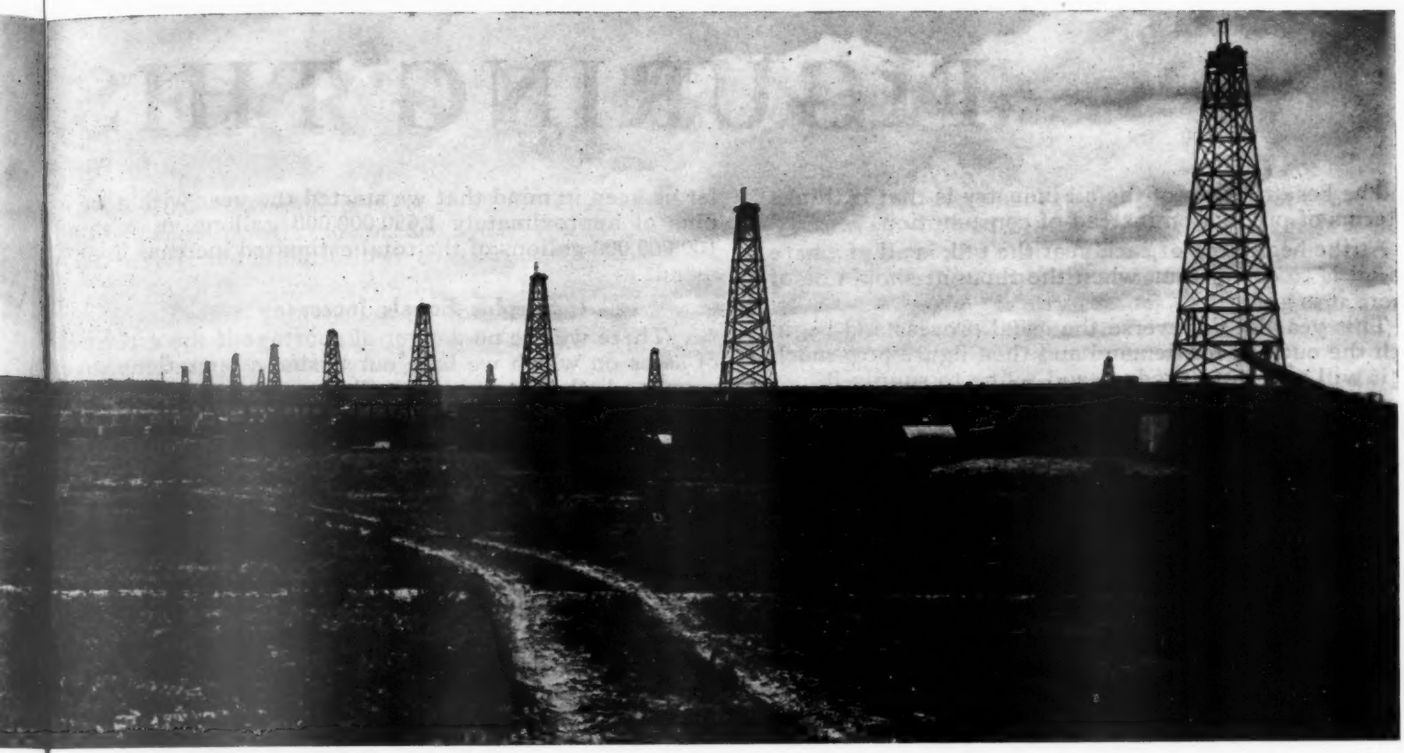
Both have their "Golden Lane"

Here are two companies, each boasting its "Golden Lane." Golden in fact as well as in name. Each lane is lined with Moore derricks from which flows the steady stream of amber liquid. Success and Moore derricks go hand in hand. The more Moore derricks, the more Golden Lanes like these.

There are more Moore derricks in use than of all other steel derricks combined. The Moore was the first really successful steel derrick. Its unvarying dependability soon made it the first choice of the greatest number of operators.

Illustrated catalog on request.





The Golden Lane of the Texon Oil & Land Co., Santa Rita, Tex. Looking south.

MOORE
TUBULAR STEEL
DERRICKS

LEE C. MOORE & CO., Inc.
OLIVER BUILDING PITTSBURGH, PA.

CASPER, WYO. Midwest Building
DALLAS, TEXAS Magnolia Building
TULSA, OKLA. Atlas Life Building
SHREVEPORT, LA. 414 Merchants Building
PARKERSBURG, W. VA. Union Trust Building

The Golden Lane of the Big Lake Oil Co., Texon, Tex. Looking east.

FIGURING THIS

By W. T.

The besetting sin of the oil industry is that it thinks in terms of production instead of consumption.

At the beginning of each year the talk is all of where the oil is to come from, when the thought should be of where it is going to.

This year let us reverse the usual process and begin with the outlook for demand and then figure how much oil it will pay us to produce and refine to supply it.

Gasoline is the yardstick of the oil industry. Crude is valued according to its potential gasoline. The whole industry is prosperous, or the reverse, according to the consumption of gasoline in comparison to its own stocks.

Those stocks are affected, first, by the production of more gasoline than is sold, and, second, by the volume of sales. The industry can have some measure of control over its production but the volume of sales may be affected by factors beyond the power of the oil industry. Chief of these disturbing or beneficial factors may be the weather. Next may be the condition of general business and its reflection in the purchasing power of the gasoline consumer.

The spring of 1924 was disastrous, partially because of the unseasonable weather. The early spring of 1925 was, on the contrary, one of the main factors in improving the gasoline situation last year.

Abnormal Conditions

Still when you learn that domestic consumption showed an increase of over 20 per cent last year it will not do to assume that as a normal gain. It was large, as much because of the bad spring of 1924 as because of the good spring of 1925.

Another thing about figuring percentages and gains that is often forgotten is that the greater the volume the lower the percentage.

Many towns of 100,000 that make a 30 per cent gain in one census fail to understand why as they grow larger their percentage of increase shrinks. It is the same way with gasoline consumption.

The domestic demand for gasoline grew 16.4 per cent in 1924, or 1,096,000,000 gallons. It grew 20.5 per cent last year, or 1,544,000,000 gallons.

The gain in motor registration in 1924 was 17 per cent. The registration at the close of 1925 showed an increase of 13.9 per cent. The numerical increase was about the same for each year.

It is true that the more general use of the closed cars, making year-'round driving possible, and the growth of the truck and motor bus consuming twenty times as much gasoline per vehicle as the ordinary passenger car, make for large consumption of motor fuel. But can this gain in volume much more than offset the decline in percentage as the totals grow?

In estimating the probable consumption of gasoline for 1926 and allowing a 10 per cent increase in exports, which is below the normal, it seems safe to figure it at around 1,750,000,000 gallons above 1925 or, say, 250,000,000 gallons in excess of the total increase last year.

This would make the total for 1926 about 12,500,000,000 gallons against 10,655,000,000 gallons consumed in 1925.

If it is argued that this estimate is, perhaps, too low, let us keep in mind that we started the year with a surplus of approximately 1,650,000,000 gallons, or within 100,000,000 gallons of the total estimated increase in demand.

Surplus Equals Increase

There will be no danger of shortage if the estimate of sales on which we base our business operations this year is a little low since we will have the gasoline to sell from stock if production falls short.

Now turn to the production end. What is necessary to provide for this estimated increase in demand?

It is agreed that the refining industry's increased efficiency in gasoline recovery, which has jumped from 30.9 per cent to 34.9 per cent in three years will in all probability increase 2 per cent more in 1926. This, of course, includes natural gasoline.

That 2 per cent increase in refinery efficiency will mean an additional production of 650,000,000 gallons of gasoline from the same crude supply, or over one-third of the total increase in gasoline supply estimated we shall need.

In terms of crude oil that is equal to about 44,000,000 less barrels than we would have needed this year to produce that much gasoline with last year's refining standards.

The crude run to stills in 1924 was 80,000,000 barrels more than in 1923 and that run last year was 97,000,000 barrels more than in 1924.

We start this year with an added manufacturing efficiency of refiners and natural gasoline manufacturers equal to an addition of 44,000,000 barrels of crude. Think over that.

But there still remains 1,100,000,000 gallons of gasoline needed to supply that estimated gain in consumption of 1,750,000,000 gallons.

We might, if we wished, get almost all of that from our stock of 1,650,000,000 gallons but, of course, we are not going to do that.

That fact, however, is also worth bearing in mind.

Last year we ran to stills 740,000,000 barrels. It is estimated that this year we will run about 100,000,000 barrels more, or around 850,000,000 barrels.

If we can, on an average, recover 37 per cent gasoline from crude we would need about 65,000,000 more barrels than in 1925 to produce the 1,100,000,000 more gallons of gasoline needed to round out that estimated increase of 1,750,000,000 gallons over last year's consumption.

The Crude Needed

There are other things, however, to be taken into account.

We produced and imported over 11,000,000,000 gallons of gasoline last year, or an excess over our domestic consumption and exports of about 350,000,000 gallons which was added to our stocks.

If we add the 650,000,000 gallons to be gained this year by increased manufacturing efficiency to the 350,000,000 gallons we made in excess of our needs last year it makes a total of 1,000,000,000 gallons more available than we needed last year.

Subtract that from the 1,750,000,000 gallons estimate of increase in consumption this year, and we only re-

S YEAR'S BUSINESS

ANDERSON

quire 750,000,000 gallons more in 1926. That would reduce the additional crude needed by one-fourth of 65,000,000 barrels and bring it down to about 50,000,000 barrels.

So much for crude as raw material for gasoline. But, as Mr. Teagle pointed out to the Federal Oil Board, crude has a cheaper and aggressive competitor as gasoline-making material in fuel oil.

Petroleum history is repeating itself.

Once again the stone which the builders rejected is becoming the chief corner stone.

It used to be gasoline which was the vexing by-product. Since the coming of the motor engine and the growth of the demand for gasoline, fuel oil has become the by-product that has been bothering the industry.

But just as gasoline jumped from the lowliest to the proudest place in the industry's products, fuel oil, too, is in fair way to claim its own.

The more gasoline was made by the older methods the more fuel oil was made. The problem grew by what it fed upon.

Then came cracking and increased refinery efficiency, making it possible to crack almost 100 per cent of the residuum after the gasoline had been removed by skimming. That is where we are today, and who knows where we may be tomorrow?

Learning About Oil

It has often been said that we are only on the edge of our knowledge of the possibilities of petroleum. Our experience with gasoline and now with fuel oil is proving it.

The man who thinks he knows about oil is very apt to find himself rebuked by the progress of science within a year.

Hardly had the industry begun to think of oil in terms of gasoline content and to reassure itself against a flood of heavy oil on that account than it discovered that crudes hitherto supposed to be of little value for gasoline making were not only potential gasoline but possessed the very properties of anti-knock fuel so eagerly sought.

Now we are also beginning to speak of refinable oil as distinguished from crude.

The natural effect of the recognition of the gasoline value of fuel oil must be reflected in its price. It may soon become too valuable for many of the purposes where it has been used as a substitute for coal.

The competition of fuel oil with crude as gasoline material must not be forgotten in figuring where we are to get that extra gasoline for 1926.

More Consumption Coming

At the same time there are other aspects of the picture that should not be overlooked. The whole surplus of gasoline amounts to only about 80 gallons for every car and truck and bus in the country.

They have been talking about the saturation point for motor cars for 20 years and in that time we have risen from a total of 25,000 cars in use to over 20,000,000.

One car used to satisfy a family. There is an increasing number of families having two or more cars, one for the man of the house and one for those at home when he goes to work.

Two years ago our ratio was a car to every seven persons in the United States. Now the average is a car to every 5.7 persons. In California they have a car for every 2.7 persons, twice the ratio for the country at large. If the rest of the country reaches that rate of car ownership, think how many more cars that would mean and the gain in gasoline consumption.

The southern states are those with least cars per population but that is the section where development is promising most revolutionary results. The industrialization of the South and exploitation of its resources is really getting under way at last.

Iowa, Kansas, Colorado, Indiana, Michigan, Minnesota, Wisconsin, the Dakotas and Ohio have cars for every four or five persons. Even Illinois has more than the national average. It is the crowded eastern states that have less, New York, Pennsylvania, Massachusetts and New Jersey, and they are steadily gaining in car ownership.

Yet from now on we may look for a much greater percentage of gain in trucks and buses than in passenger cars, which means an increased volume of consumption.

An automotive statistician makes the prediction that within 10 or 15 years our commercial traffic volume will be doubled.

One thoughtful individual has even suggested that the day may be coming when there will be more trucks and buses than there are passenger cars, his thought being that with the increasing congestion of the streets and highways and the difficulty of securing parking places the public will turn more and more to the public vehicles.

The Path to Prosperity

So far as its market is concerned both in 1296 and ahead the oil industry has every reason to be satisfied with the outlook without overestimating the demands for its products, its chief failure in recent years.

So far as its ability to find the crude and produce the gasoline is concerned its stocks on hand are a guarantee for the present year.

But, of course, it must constantly look beyond that. This year particularly, because with a certain need for at least 50,000,000 more barrels of crude than was produced last year and with less assurance of new production, withdrawal from stocks is an increasing probability.

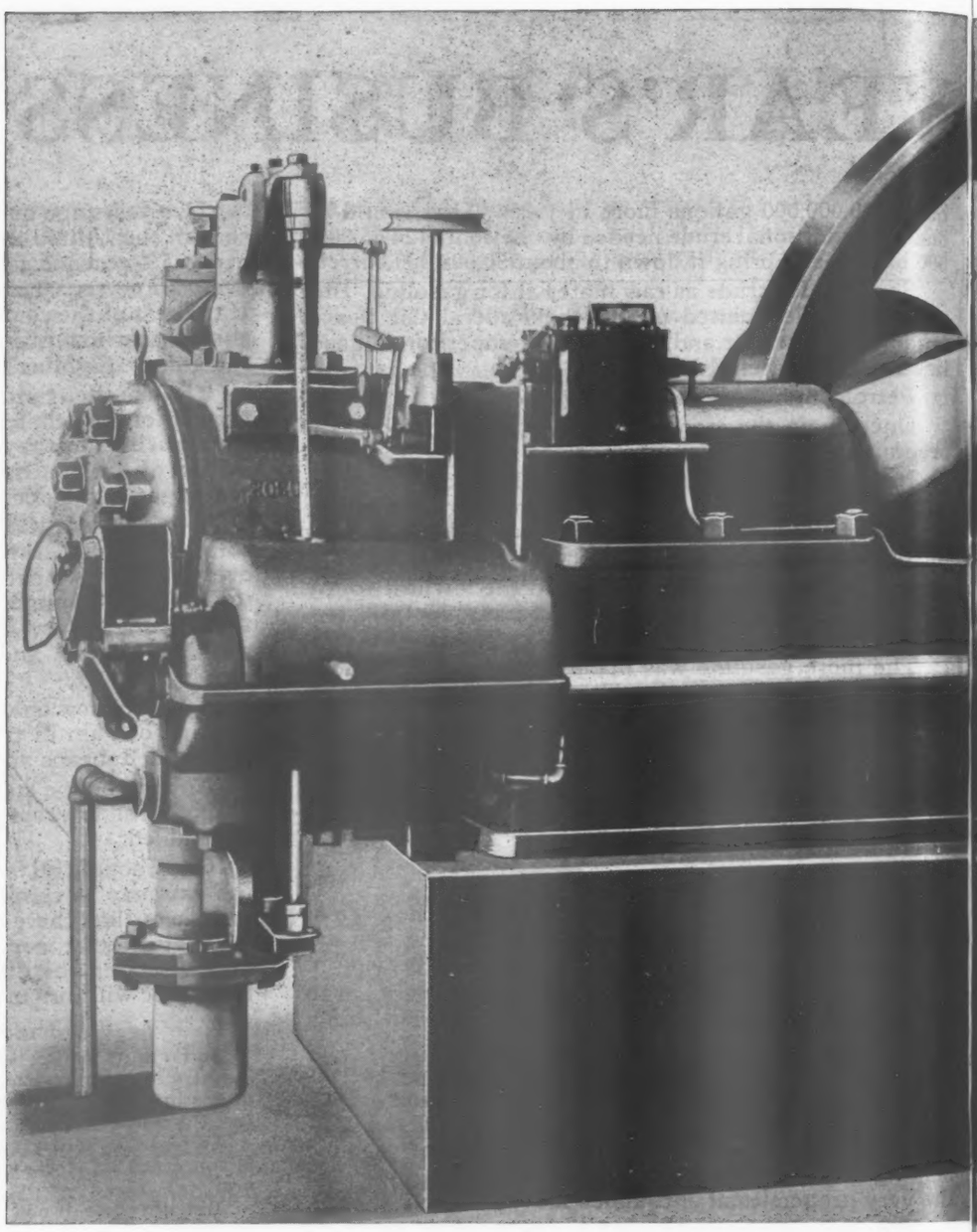
At the same time it should be remembered that California has 65,000 barrels a day production shut in and ability to increase its production materially at will. The West Coast was the disturbing feature in the past year; that potentiality has not entirely passed and possibly may not for the present year.

It will require delicate adjustment of price relationship to avoid inducing overproduction in California by otherwise justified price increases elsewhere. The question for the eastern producer to ask himself is whether he will not be better off with prices that will not tempt California competition.

Everyone, we think, will agree that a stable, moderately profitable condition is to be preferred to a brief period of high prices that in the end invites depressing competition.

The year 1926 has opened with such bright promise, the most favorable for the oil industry for four years, that we can afford to look the facts in the face and be guided by what they show. The industry can have a year of unexampled prosperity if it works together, none seeking undue advantage.

Such prosperity as oil men enjoyed in the past year was due largely to the measure of self-control they exercised. The present year can be correspondingly more prosperous as the industry masters its problems and its impulses.



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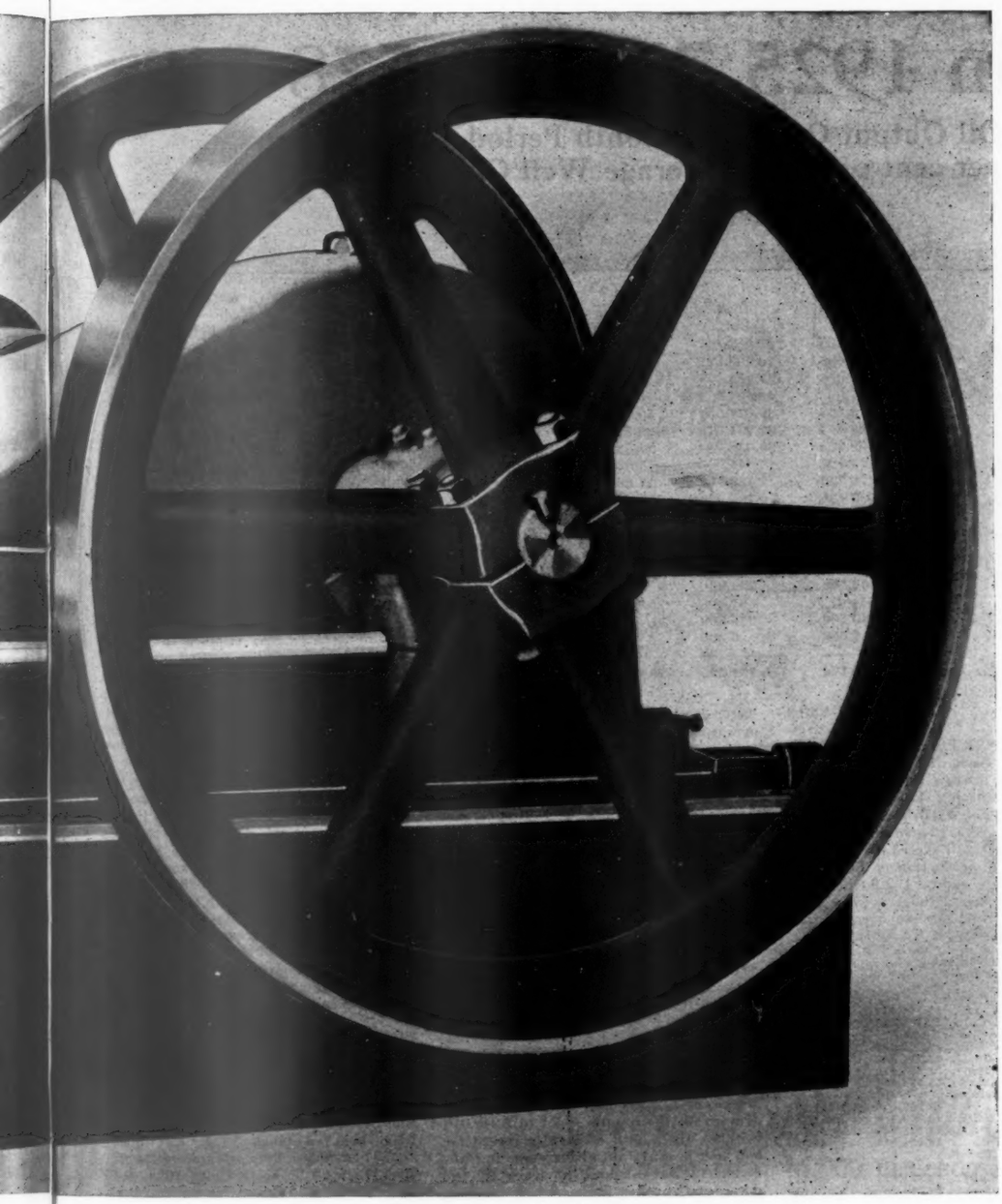

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S ENGINES

Production in 1925 759,846,578 Bbls.

Nation's Greatest Oil Output Over a 12-Month Period. Forty Seven Pools Produce 73 per cent of Total. Average Well Output Increased

By James McIntyre

All records for 12 months production in the United States were broken in the calendar year, 1925, in which 759,846,578 bbls. of crude petroleum was produced. This represents an increase of 20,969,402 bbls. over the production of 1923, and 39,115,356 bbls. over the production of 1924. The production in 1923 was 738,877,176 bbls., and of 1924, 720,731,222 bbls.

The production of the country last year was nearly 60,000,000 bbls. more than the estimates made at the beginning of the year, with only the Wortham Pool in East Central Texas, and the new Inglewood and Rosecrans Pools in California in sight as certain to develop large production in the course of the year.

As late as the month of March, the country was producing at the rate of about 710,000,000 bbls. per year, but it had by that time become known that the lid was off as far as production was concerned, the discovery of a deep sand of large productivity in the Smackover Field, in Arkansas, clearly indicating that the production estimates must be revised upward. Later in the year deep sands in the old fields and entirely new pools scattered over the broad expanse of territory west of the Mississippi River combined to put production up to a figure it had never attained before over any 12-month period.

It is interesting to see the changes in the quantity of oil produced in the various divisions of the oil regions of the United States. California, for example, produced in 1925, 230,147,342 bbls.; in 1924, 230,063,117 bbls.; in 1923, its biggest year, 263,728,895 bbls. Oklahoma last year produced 173,270,063 bbls.; in 1924, its biggest year, 176,206,397 bbls. Texas, in 1925, produced 144,783,451 bbls., its biggest year; in 1924, 135,361,378 bbls., and in 1923, 131,997,038 bbls. Kansas' production last year was 38,151,622 bbls.; in 1924, 29,671,551 bbls., and in 1923, 29,812,123 bbls. The best year Kansas ever had in production was in 1918, when its total output reached 43,253,470 bbls., otherwise, last year's production was never exceeded by the fields of that State. Arkansas last year had a record-breaking production, 78,407,138 bbls. In 1924, the total reached 48,167,912 bbls., and in 1923, 38,647,863 bbls. The Louisiana Field came back somewhat with 21,537,564 bbls. In 1924, the output was 20,638,051 bbls., and in 1923, 24,708,993 bbls. It was a bad year for the Rocky Mountain division which fell off to 35,620,198 bbls. from its 1924 record of 42,509,594 bbls., and its 1923 showing of 45,126,921 bbls.

The production of the combined States east of the Mississippi, including New York, Pennsylvania, West Virginia, Ohio, Indiana, Kentucky, Tennessee and Illinois, was 37,929,200 bbls. in 1925; 39,961,124 bbls. in 1924, and 39,841,658 bbls. in 1923.

Of last year's big total of crude output 73 per cent came from 48 fields in California, Wyoming, Kansas, Oklahoma, Texas, Arkansas, Louisiana and the Bradford Field which lies mainly in McKean County, Pennsylvania, but which extends into Cattaraugus County and Allegany County in New York State.

These 48 fields, or rather 47, because, in the list, the Smackover Field in Arkansas, is divided into "Smackover heavy" and "Smackover light," produced 555,766,020 bbls., or an average daily of 1,522,647 bbls. All the other fields in the country combined produced 204,080,558 bbls., or an average of 559,124 bbls. a day. The 48 pools produced 82,000,000 bbls. more than the whole United States in 1921.

PRODUCTION OF THE UNITED STATES IN 1923, 1924 AND 1925

	1923 Bbls.	1924 Bbls.	1925 Bbls.	Oil Wells Dec. 31, 25	Av. Daily Prod. per Well Bbls.
California	263,728,895	230,063,117	230,147,342	11,400	55.31
Oklahoma	165,013,685	176,206,397	173,270,063	58,888	8.06
Texas	131,997,038	135,361,378	144,783,451	20,984	18.90
Arkansas	38,647,863	48,167,912	78,407,138	4,030	53.3
Kansas	29,812,123	29,671,551	38,151,622	18,358	5.69
Wyoming	42,386,704	39,251,070	29,229,303	2,990	26.78
Louisiana	24,708,993	20,638,051	21,537,564	3,580	16.58
Illinois	8,720,125	8,041,000	7,862,000	16,900	1.28
Pennsylvania	7,276,850	7,529,100	7,831,200	77,025	.28
Ohio	7,080,125	6,797,000	7,175,000	39,430	.50
Kentucky	8,066,000	7,396,900	6,770,000	13,400	1.38
West Virginia	6,400,458	5,924,000	5,780,000	20,100	.71
Montana	2,677,717	2,785,724	4,122,653	554	20.38
New York	1,250,100	1,482,000	1,660,000	13,910	.33
Colorado	62,500	391,922	1,171,625	54	59.44
New Mexico	.....	81,800	1,096,617	116	27.00
Indiana	1,040,500	936,000	828,000	2,600	.87
Tennessee	7,500	6,300	23,000	....	....
Total	738,877,176	720,731,222	759,846,578	304,319	6.84

The Smackover Field broke all records for production east of California, in any calendar year with a total of light and heavy oil aggregating 73,975,613 bbls., or a daily average of 202,673 bbls. Its total production for the 12 months ending in March this year will exceed its 1925 total as the big new production of Smackover did not begin to show its influence until April. Following is the list of pools in the country which averaged more than 10,000 bbls. a day for the whole year:

Leading Pools of the United States in 1925. Averaging 10,000 bbls. a day or over.

Rank	Pool and State	Prod. 1925 Bbls.	Daily Av. Bbls.
1	Smackover, Ark. (heavy)	63,884,174	175,025
2	Long Beach, Calif.	40,173,375	110,064
3	Midway-Sunset, Calif.	36,923,402	101,160
4	Tonkawa, Okla.	22,721,580	62,251
5	Salt Creek, Wyo.	21,680,070	59,397
6	Burbank, Okla.	19,954,667	54,670
7	Santa Fe Springs, Calif.	18,969,528	51,971
8	Inglewood, Calif.	18,348,396	50,270
9	Powell, Tex.	17,218,874	47,175
10	Wortham, Tex.	16,024,035	43,901
11	Huntington Beach, Calif.	15,887,474	43,527
12	Dominguez, Calif.	13,328,817	36,517
13	Archer, Tex.	13,254,247	36,313
14	Torrance, Calif.	13,242,817	36,280
15	Elk Hills, Calif.	11,971,149	32,798
16	Cromwell, Okla.	11,673,369	31,982
17	Smackover, Ark. (light)	10,091,439	27,648
18	Bristow, Okla.	9,547,666	26,158
19	Luling, Tex.	9,371,992	25,403
20	Ventura-Newhall, Calif.	9,263,472	25,379
21	Big Lake, Tex.	8,759,457	23,998
22	Cushing-Shamrock, Okla.	8,024,550	21,985
23	Papoose, Okla.	7,802,531	21,377
24	Coalinga, Calif.	7,751,107	21,236
25	Garber, Okla.	7,484,428	20,506
26	Humble, Tex.	7,296,687	19,991
27	Rosecrans, Calif.	7,263,466	19,900
28	Coyote, Calif.	7,140,004	19,562
29	Montebello, Calif.	6,843,194	18,748
30	Mexia, Tex.	6,730,323	18,439
31	Electra, Tex.	6,294,646	17,246
32	Kern River, Calif.	5,901,855	16,169
33	Bradford, Pa.-N. Y.	5,812,625	15,925
34	Healdton, Okla.	5,575,981	15,277
35	Hewitt, Okla.	5,324,672	14,588
36	Burkburnett, Tex.	5,158,665	14,133
37	Orange, Tex.	4,942,157	13,540
38	Homer, La.	4,815,883	13,194
39	South Liberty	4,674,003	12,805
40	Teeter-Pixley, Kan.	4,574,865	12,534
41	Wewoka, Okla.	4,483,843	12,284
42	Fullerton, Calif.	4,481,443	12,278
43	Graham-Fox, Okla.	4,442,526	12,171
44	Richfield, Calif.	4,318,488	11,831
45	West Columbia, Tex.	4,183,636	11,462
46	Haynesville, La.	4,178,839	11,449
47	Mounds-Beggs, Okla.	4,026,207	11,036
48	Rainbow Bend, Kan.	3,949,396	10,820
	Total 48 pools	555,766,020	1,522,647
	Other fields	204,080,558	559,124
	Total U. S.	759,846,578	2,081,771

Notwithstanding that the production last year was more than in 1924, the average daily production in January, 1925, was only 15,000 bbls. less than the average for the month of December. The fields of the United States produced 61,227,656 bbls. in January, an average of 1,975,085 bbls. a day, and after reaching a peak of 69,502,556 bbls. in May, dropped off by degrees to 61,698,743 bbls. in December, so that the year 1926, opened with the production no more than it had been at the same time last year.

Low Spot in March

The low spot in 1925, was in March when the average had fallen to 1,942,756 bbls. a day but mainly through the influence of the Smackover Field which jumped the Arkansas production from a daily average of 114,983 bbls. in March, to 252,008 bbls. in April, and 381,097 bbls. in May, assisted by Kansas which increased from 91,114 bbls. a day in March, to 112,686 bbls. in May, the daily average for the country went to 2,242,018 bbls. for the month of May, a record for one month. Substantial increases in California in June helped to stave off the decreases in other fields and that month averaged 2,204,264 bbls. a day after which the country's output began to steadily drop until it fell below the 2,000,000-bbl. mark in December for the first time in nine months.

California opened the year with a daily average of 604,622 bbls. in January. Its low month was April, when the daily average had dropped to 598,655 bbls. and the high month, August when the average was 677,599 bbls., dropping in December to 620,959 bbls.

Oklahoma opened the year with an average for January of 498,800 bbls.; fell to 460,115 bbls. a day in June and climbed to 486,366 bbls. in November, ending the year with 455,608 bbls. a day for December.

Wortham's Influence

Texas, thanks to Wortham, produced an average of 445,056 bbls. a day in January, which was the highest point in the year, closing with a low of 352,595 bbls. a day in December, notwithstanding that it was a very busy year in the field in that State and that many small pools were opened in the northern and north central part of the State and in the Gulf Coast.

Kansas had a good productive year, opening with 81,318 bbls. a day in January; increasing to 118,925 bbls. in July when the Cowley and Greenwood County discoveries were at the top of their productiveness and it closed at 106,736 bbls. a day as an average for December.

Arkansas began the year with a daily average of 108,410 bbls. It dropped to 103,082 bbls. a day in February, arose to 381,097 bbls. in May, and then fell steadily, closing the year with a daily average of 195,903 bbls. in December.

Louisiana did not fluctuate much in the course of the year. It started with 56,785 bbls. a day from the combined North Louisiana and Coastal Fields, and ended the year with a daily average of 56,902 bbls. Its summit was arrived at in July, an average of 61,231 bbls.

The Rocky Mountain division started the year with an average in January of 84,689 bbls., went as high as 109,500 bbls. a day in October and averaged in December 102,812 bbls.

The combined Eastern Fields commenced the year with an average in January of 98,903 bbls., climbed to 109,000 bbls. in June, and then settled off to 99,552 bbls. a day in December. Field work in that part of the United States is affected materially by weather conditions. The peak of production comes some time in midsummer and the low spot in production when the weather is coldest and the snow deepest.

Average Well Production Increases

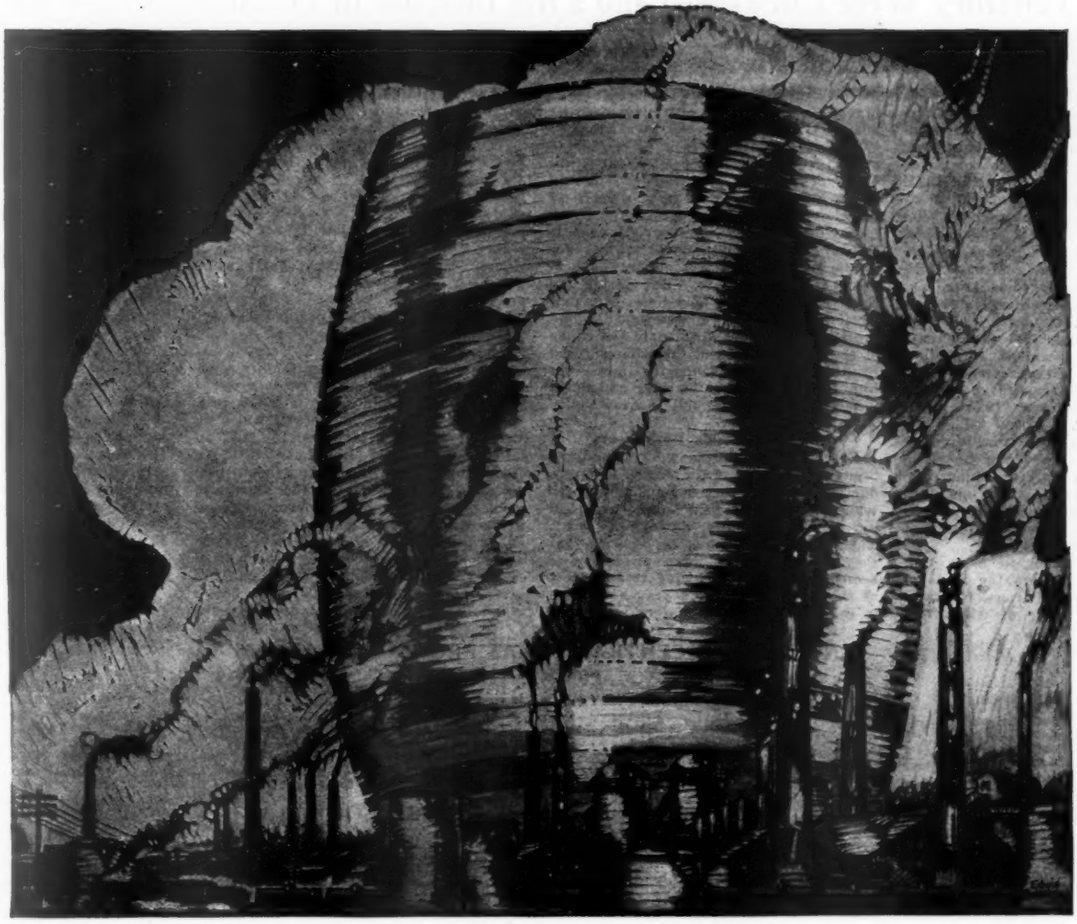
The number of oil wells in the United States at the close of 1925, is reported as 304,319, as against 298,915 wells at the close of 1924. The average production of the oil wells in 1925 was 6.84 bbls. per well per day, while in 1924 it was 6.59 bbls. California maintained its record of highest production per well with an average of 55.31 bbls. a day, with Arkansas second, 53.3 bbls. a day. The average in all the States for the two years was as follows: California, 1924, 55.53 bbls.; 1925, 55.31 bbls.; Oklahoma, 1924, 8.32 bbls.; 1925, 8.06 bbls.; Texas, 1924, 20.9 bbls.; 1925, 18.90 bbls.; Arkansas, 1924, 44.94 bbls.; 1925, 53.3 bls.; Kansas, 1924, 4.05 bbls.; 1925, 5.69 bbls.; Wyoming, 1924, 41.94 bbls.; 1925, 26.78 bbls.; Louisiana, 1924, 12.63 bbls.; 1925, 16.58 bbls.; Illinois, 1924, 1.31 bbls.; 1925, 1.28 bbls.; Pennsylvania, 1924, .27 bbl.; 1925, 0.28 bbl.; Ohio, 1924, 0.47 bbl.; 1925, 0.50 bbl.; Kentucky, 1924, 1.62 bbls.; 1925, 1.38 bbls.; West Virginia, 1924, 0.82 bbl.; 1925, 0.71 bbl.; Montana, 1924, 20.63 bbls.; 1925, 20.38 bbls.; New York, 1924, 0.28 bbl.; 1925, 0.33 bbl.; Indiana, 1924, 1 bbl.; 1925, 0.87 bbl.; New Mexico, 1924, ne record available; 1925, 27 bbls.

PENNSYLVANIA GASSER

KNOX, Pa., Feb. 13.—The Shaner & Slicer Co. comp'eted a deep gas well on the Thomas tract near Arthur, good for 250,000 feet for Schill, Oches and Judy. The Alum Rock Co. completed a deep well in the O'Neill Pool, which was a dry hole in the oil sand, but a fair gas well in the deep sand, and made a location on Lewis Oches, the adjoining farm. Alum Rock Gas Co. shot a well on the Steve Beichner farm near Venus, which promises to make a 2 or 3 bbl pumper, making five oil wells and five deep gas wells on this farm. J. H. Eddinger & Co. are drilling a well for J. W. Bahnham Co. at Turkey City.

GETS ARKANSAS CHARTER

LITTLE ROCK, Ark., Feb. 15.—A charter was issued recently in Arkansas to the Mechanical Oil Treating Corp. of Louisiana with reported capital investment of $40,000. A branch office is to be established at El Dorado.



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North Central Texas' Fruitful Year

Not a Single Big Field Was Developed, But Many New Pools in Old Territory Were Uncovered and a Big Increase in Productoin Resulted

By George R. Kelley

The North Central and West Texas oil territory accounted for a total of 3,884 new completions during 1925, 1,070 more than were recorded the previous year and only 930 less than were completed in the entire State of Oklahoma in 1924. The new production boosted the total production from a daily average of 130,000 a year ago to around 170,000 bbls. and accounted for a total initial production of 312,832 bbls., as compared with 227,209 bbls. in the previous year.

There is one outstanding feature of field development in the territory during the past year. That is that the increase in production came almost altogether from intensive, rather than extensive, development. This statement is borne out by the fact that the year 1925 cannot account for a single big new field. The increased production came from intensive drilling in the older producing areas, in Wichita, Archer, Wilbarger, Young, Stephens, Eastland, Reagan and a few other counties, not to mention a large volume of new output from the shallow sands of Brown and Callahan Counties.

This cannot be taken to mean that work has been confined to the fields of these older producing districts, for there has been a larger range of wildcatting in this territory the past year than during any equal period of time since the boom days of five or six years ago.

During 1925 the wildcatter went into every nook and corner of North and West Texas. He was extremely daring in his eagerness to find new sources of petroleum, to open up new fields. Heretofore he has been more or less content to play around the outskirts of the older producing areas, to feel his way out to new pools, as it were. But during the past year he pushed boldly out into new territory. He pushed westward beyond the Pecos and went down onto the banks of the Rio Grande and then disregarding State and National boundary lines crept into New Mexico on the west and down into the Mexican Republic on the southwest.

No New Fields Developed

But this extensive wildcatting has brought very little in the way of new production. To be exact not a single worth while new wildcat field has been opened up in this territory during the year. There were new pools, to be sure, but they have all been more or less connected with older producing areas. Most of the new pools of the year have been in the shallow or semi-shallow sand belts of Archer County, north Young County, in Wilbarger and other districts that have been producing for years.

The rank wildcatters of the past year in North Texas have very little in the way of results to be proud of. Two or three times during the year it looked as though some very valuable hits had been made, so much so that in a few instances the wildcatters sold out for big prices. But as yet nothing worth while has been accomplished in the matter of new fields.

Crockett and Upton Disappointments

The first big sensation came early in June when the World Oil Co., which had been working on a Crockett County wildcat for nearly two years, encountered a good showing for a well at 2,647 feet. This was on the L. P. Powell ranch in Crockett County, between 15 and 20 miles south of the Big Lake Field in Reagan County. Much excitement prevailed when on June 10 the announcement of the discovery was broadcast and a few days later officials of the Humble Oil & Refining Co. appeared on the scene and purchased from Chester Bunker, head of the World Oil Co., the well and 2,500 acres of leases for $1,400,000, about $400,000 of which was paid in cash and the balance to be paid out of oil as produced from the properties.

Since that time the Powell wildcat has been making about 25 bbls. daily, but it has never been drilled any deeper. The Humble has drilled two other wells on the property, one a 20-bbl. producer and the other a dry hole. The company is now drilling two other wells. Leases changed hands at somewhat exorbitant prices, but only a comparatively small number of wells were started, most of the operators preferring to wait on the outcome of the work being done by the Humble. As yet there is no important oil producing field in Crockett County.

The next big wildcat stir came from Upton County, when on September 25 the McCamey & Johnston wildcat on the Mrs. Baker ranch in the southwestern part of the county, showed for a producer. The story of this discovery is almost a parallel to that of the World well. There were buyers as eager for this piece of property as the Humble was for the World property in Crockett County, and McCamey & Johnston sold out to the Republic Production Co. of Houston for approximately $500,000.

This well, though not officially com-

(Continued on Page 206)

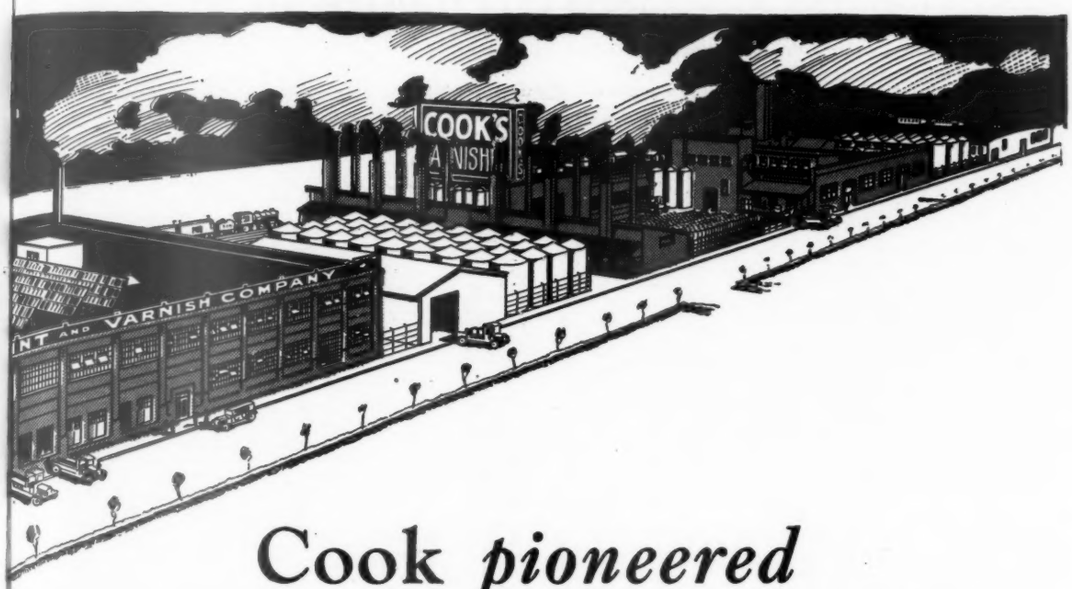
NORTH AND CENTRAL TEXAS PRODUCTION IN 1925

NORTH TEXAS

		January Bbls.	February Bbls.	March Bbls.	April Bbls.	May Bbls.	June Bbls.	July Bbls.	August Bbls.	September Bbls.	October Bbls.	November Bbls.	December Bbls.	Total 12 Months
Burkburnett:	Daily average	13,526	15,149	15,104	14,843	14,497	14,717	14,192	14,063	13,620	13,169	13,067	13,742	
	Month	419,306	424,172	468,224	445,290	449,407	441,510	439,952	436,952	408,600	408,239	392,010	426,002	5,158,665
Electra:	Daily average	17,587	17,238	17,318	17,158	16,908	17,328	17,528	17,532	17,122	16,996	16,870	17,314	
	Month	545,197	482,664	536,858	514,740	524,148	519,840	543,368	543,492	513,660	526,845	506,100	536,734	6,294,646
Iowa Park-K.M.A.:	Daily average	3,649	3,989	4,184	4,527	4,108	4,221	5,856	6,063	5,906	5,577	5,512	5,411	
	Month	113,119	111,692	129,704	135,810	127,348	126,630	181,536	187,953	177,189	172,887	165,360	167,741	1,796,960
Archer County:	Daily average	36,293	41,218	41,607	39,649	38,237	37,946	35,453	35,344	33,441	32,638	31,932	32,336	
	Month	1,125,238	1,154,104	1,289,817	1,189,470	1,185,347	1,138,380	1,099,043	1,095,664	1,003,230	1,011,778	959,760	1,002,416	13,254,247
Clay County:	Daily average	348	445	379	524	469	462	400	377	388	377	412	407	
	Month	10,788	12,460	11,749	15,720	14,539	13,860	12,400	11,687	11,640	11,687	12,360	12,617	151,507
Wilbarger County:	Daily average	4,925	4,957	6,492	7,993	9,213	8,860	8,997	8,086	9,285	11,927	14,199	13,762	
	Month	152,675	138,796	201,253	239,790	285,758	265,800	278,907	250,666	278,550	369,737	425,970	426,622	3,314,523
Montague County:	Daily average	.....	77	73	88	163	161	341	319	307	307	801	796	
	Month	.....	2,156	2,263	2,640	5,053	4,830	10,671	9,889	9,210	18,817	24,030	24,676	114,135
Baylor County:	Daily average	.....	.....	.....	.....	.....	.....	127	180	220	366	323	321	
	Month	.....	.....	.....	.....	.....	.....	3,937	5,580	6,600	11,346	9,690	9,951	47,104

CENTRAL TEXAS AND PANHANDLE

Clear Fork:	Daily average	5,715	5,829	6,351	5,616	5,517	5,754	5,476	5,243	5,114	6,759	6,643	6,475	
	Month	177,165	163,212	196,881	168,480	171,027	172,620	169,956	162,532	163,420	209,529	199,290	200,725	2,144,638
Breckenridge:	Daily average	8,666	8,354	8,876	8,043	7,632	7,355	6,926	6,895	6,811	6,369	6,145	6,406	
	Month	268,646	233,912	275,156	241,290	236,592	220,650	214,675	213,745	204,330	197,439	184,350	198,586	2,689,371
Caddo:	Daily average	5,035	4,949	4,577	4,983	7,550	7,922	5,553	4,527	4,473	4,206	3,918	3,863	
	Month	156,085	130,172	141,887	149,490	234,236	237,660	172,143	140,337	134,190	130,386	117,540	119,753	1,863,879
Gunsight:	Daily average	60	78	64	64	52	57	39	56	.....	.....	.....	.....	.....
	Month	1,860	2,184	1,984	1,920	1,612	1,710	1,209	1,736	.....	.....	.....	.....	14,215
Ranger-Eastland:	Daily average	6,691	6,798	6,940	6,457	6,486	6,342	6,458	6,423	6,077	5,917	5,841	5,744	
	Month	207,421	190,344	215,140	193,710	201,066	190,260	200,198	199,113	182,310	183,427	175,230	178,064	2,316,283
Rising Star:	Daily average	100	95	109	81	89	102	73	112	130	114	97	99	
	Month	3,100	2,660	3,379	2,430	2,759	3,060	2,263	3,472	3,900	3,534	2,910	3,069	36,536
Sipe Springs:	Daily average	160	170	209	195	186	208	189	159	159	135	169	160	
	Month	4,960	4,760	6,479	5,850	5,766	6,240	5,859	4,929	4,770	4,185	5,070	4,960	63,828
Desdemona:	Daily average	2,745	2,718	2,689	2,715	2,596	2,557	2,559	2,426	2,358	2,258	2,132	2,074	
	Month	85,095	76,104	83,359	81,450	80,476	76,710	79,329	75,206	70,740	69,998	63,960	64,294	906,721
Pioneer:	Daily average	1,039	1,004	1,002	1,206	913	916	825	796	759	684	680	676	
	Month	32,209	28,112	31,062	36,180	28,303	27,480	25,575	24,676	22,770	21,204	20,400	20,956	318,927
Brown County:	Daily average	920	948	1,260	1,376	2,035	2,278	2,808	2,358	2,536	2,114	2,266	2,270	
	Month	28,520	26,544	39,060	41,280	63,085	68,340	87,048	73,098	76,080	65,534	67,980	70,370	706,939
Callahan County:	Daily average	2,270	3,195	3,908	4,334	3,981	3,159	3,187	2,827	3,281	2,767	5,055	5,402	
	Month	70,370	89,460	121,148	130,020	123,411	94,770	98,797	87,637	98,430	116,777	151,650	167,462	1,349,932
Coleman County:	Daily average	77	60	70	224	236	237	315	289	293	320	244	257	
	Month	2,387	1,680	2,170	6,720	7,316	7,110	9,765	8,959	8,790	10,199	7,320	7,967	80,383
Jack County:	Daily average	33	47	21	22	33	18	36	31	24	10	54	23	
	Month	1,023	1,316	651	660	1,023	540	1,116	961	720	310	1,620	713	10,653
Palo Pinto County:	Daily average	143	117	124	115	73	212	152	601	564	616	642	631	
	Month	4,433	3,276	3,844	3,450	2,263	6,360	4,712	18,631	16,920	19,096	19,260	19,561	121,806
Shackelford County:	Daily average	2,391	2,853	2,566	2,542	3,548	3,682	3,336	3,054	2,798	2,556	2,605	2,559	
	Month	74,121	79,884	79,546	76,260	109,988	110,460	103,416	94,674	83,940	79,515	78,150	79,329	1,049,283
Scurry County:	Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	71	64	60	
	Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,201	1,920	1,860	5,981
Throckmorton C'nty:	Daily average	.....	.....	.....	.....	52	83	90	83	154	236	181	205	
	Month	.....	.....	.....	.....	1,612	2,490	2,790	2,573	4,620	7,316	5,430	6,355	33,186
Reagan County:	Daily average	13,300	11,505	12,211	16,799	19,820	30,055	29,914	31,957	31,414	31,233	28,821	30,103	
	Month	412,300	322,140	378,541	503,970	614,420	901,650	927,334	990,667	942,420	968,223	864,630	933,162	8,759,457
Mitchell County:	Daily average	1,707	1,617	1,590	1,736	2,082	2,190	2,307	2,215	2,243	2,559	3,065	2,844	
	Month	52,917	45,276	49,290	52,080	64,573	65,700	71,617	68,665	67,290	79,329	91,950	88,164	796,751
Carson County:	Daily average	1,032	1,829	2,109	2,691	2,759	2,616	2,672	2,256	2,855	2,626	2,447	2,218	
	Month	31,992	51,212	65,379	80,730	85,529	78,480	82,832	69,936	85,650	81,406	73,410	68,758	855,314
Hutchinson County:	Daily average	222	286	245	758	714	699	835	1,242	1,489	1,339	2,317	2,385	
	Month	6,882	8,008	7,595	22,740	22,134	20,970	25,885	38,502	44,670	41,509	69,510	73,935	382,340
Wheeler County:	Daily average	.....	103	66	104	60	75	115	79	92	84	31	104	
	Month	.....	2,884	2,015	3,120	1,860	2,250	3,565	2,449	2,760	2,604	930	3,224	27,661
Gray County:	Daily average	.....	.....	62	56	53	47	19	56	59	66	80	95	
	Month	.....	.....	1,922	1,680	1,798	1,410	589	1,736	1,770	2,046	2,400	2,945	18,296
Potter County:	Daily average	.....	.....	.....	.....	.....	.....	19	3	34	33	30	29	
	Month	.....	.....	.....	.....	.....	.....	589	93	1,020	713	900	899	4,214
	Daily average	128,639	135,328	140,205	144,899	150,079	160,259	156,796	155,652	154,006	155,736	156,703	159,770	
	Total 1925	3,987,809	3,789,184	4,346,355	4,346,970	4,652,449	4,807,770	4,860,676	4,825,212	4,620,180	4,827,816	4,701,090	4,921,870	54,687,381
	Total 1924	3,359,236	3,280,251	3,595,406	3,767,470	3,923,212	3,787,810	3,840,869	3,929,027	3,577,980	3,746,847	3,844,740	3,921,045	44,624,893
	Total 1923	4,311,280	3,816,348	4,175,196	3,595,160	3,823,304	3,940,530	4,778,155	3,496,879	3,227,690	3,990,448	3,178,430	3,302,660	45,043,070



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California Remains Important Factor

Production Can Be Increased 75,000 Bbls. a Day by Drilling in Defined Territory; Production Maintained in 1925 With Less Drilling

By L. P. Stockman.

During the early part of 1925 conditions looked quite promising in California for a very prosperous year, but the rapid development of Inglewood changed the situation from one of hope to despair before the advent of summer. We are just entering into the present new year with a somewhat similar outlook and with just as intense a desire for a complete recovery from the rather chaotic conditions which have existed for the past few years. There is really not a single black cloud visible on the horizon but the development barometer indicates the possibility that a fairly large production will be maintained during the next several months, due rather to the development of deeper producing horizons than to the opening of new areas. It generally takes a field in California at least a year to reach its maximum and for this reason the only possible disturbing factor lies in the development of deeper producing horizons where many wells can be deepened quickly and without much effort.

If it should become necessary, operators in California could, without disturbing the present curtailed production of 63,000 bbls. a day, increase the State output at least 75,000 bbls. daily by additional drilling at Rosecrans, Dominguez, Midway-Sunset, Ventura and Coyote. The Standard has a big reserve at Coyote and will secure another in the Midway-Sunset area as soon as the Standard-Pacific merger has been completed. The Barnsdall and Union companies have considerable undeveloped land at Rosecrans, while the Union and Shell have extensive holdings at Dominguez which are being reserved for future use. In the Ventura Avenue Field, the Associated, General Petroleum and Shell companies could at least double their present aggregate production of around 35,000 bbls. daily. The statement made just above that production could be boosted 75,000 bbls. a day is a conservative one and, while it involves an economic question, the estimate could be easily surpassed by a general drilling program and the utilization of improved pumping equipment and flow devices. Successful application of engineering principals to each field also affords room for increased production.

The new Seal Beach Field just recently proven up by the Marland Oil Co. will not, it is believed, reach any serious proportions this year unless something unforeseen develops. The apparent productive acreage is held in large blocks and it is most likely that the major companies controlling this field will refrain from any unnecessary drilling. Of course, conditions may change but this is the present outlook. Number 1 Bixby of the Marland, which came into production at 9:30 a. m., January 15, is given credit for the opening up of this new field, but in reality the Shell deserves some consideration in view of the fact that it pioneered work in the area. This company has spent considerable time and effort endeavoring to develop production, but so far has nothing to show for its work except two small probable edge wells on the Bryant lease, each of which is making around 5 bbls. of oil and 1,500 bbls. of water daily. No. 2 Bryant, one of them, blew out early in the year and although the gas was of sufficient volume to wreck the rig, the hole was never finished as a commercial oil producer due to the inability to shut off water. The Shell drilled a dry hole in the southern part of the Bixby lease, and although it was abandoned at 6,142 feet, the Marland took over the lease and completed the discovery well, located several hundred feet further north. The Associated followed the Shell into this area and succeeded in leasing what was early in the year, thought to be the best looking property at Seal Beach and drilled a test well to 5,742 feet, at which depth work was suspended pending the drilling of several diamond core holes to locate the trend of the structure. The Associated's first hole, No. 1 Hellman, has not by any means, condemned this property as the location was a little too far north and

TANKER SHIPMENTS FROM LOS ANGELES HARBOR—1923-1925 INCLUSIVE

	Intercoastal			Exports		
	Crude, Fuel and Tops	All Refined Oils	Total Barrels Intercoastal	Crude, Fuel and Tops	All Refined Oils	Total Barrels Exported
1923—						
January	1,500,000	.....	1,500,000	600,000	150,000	750,000
February	2,800,000	.....	2,800,000	375,000	85,000	460,000
March	3,800,000	175,000	3,975,000	1,000,000	70,000	1,070,000
April	5,500,000	175,000	5,675,000	375,000	360,000	735,000
May	6,200,000	200,000	6,400,000	850,000	75,000	925,000
June	5,900,000	350,000	6,250,000	950,000	125,000	1,075,000
July	6,500,000	125,000	6,625,000	1,100,000	125,000	1,225,000
August	5,700,000	75,000	5,775,000	975,000	90,000	1,065,000
September	6,500,000	250,000	6,750,000	750,000	125,000	875,000
October	5,600,000	.....	5,600,000	825,000	100,000	925,000
November	5,150,000	750,000	5,900,000	550,000	125,000	675,000
December	5,800,000	450,000	6,250,000	600,000	300,000	900,000
Total	60,950,000	2,550,000	63,500,000	8,950,000	1,730,000	10,680,000
1924—						
January	5,350,000	450,000	5,800,000	850,000	350,000	1,200,000
February	4,000,000	165,000	4,165,000	950,000	350,000	1,300,000
March	4,150,000	300,000	4,450,000	1,000,000	550,000	1,550,000
April	3,600,000	250,000	3,850,000	750,000	650,000	1,400,000
May	3,500,000	300,000	3,800,000	1,250,000	500,000	1,750,000
June	3,150,000	150,000	3,300,000	900,000	450,000	1,350,000
July	3,500,000	75,000	3,575,000	1,700,000	700,000	2,400,000
August	3,600,000	225,000	3,825,000	1,200,000	750,000	1,950,000
September	3,250,000	150,000	3,400,000	1,500,000	725,000	2,225,000
October	3,000,000	85,000	3,085,000	1,400,000	450,000	1,850,000
November	2,000,000	165,000	2,165,000	1,250,000	600,000	1,850,000
December	1,900,000	250,000	2,150,000	950,000	375,000	1,325,000
Total	41,000,000	2,565,000	43,565,000	13,700,000	6,450,000	20,150,000
1925—						
January	1,500,000	300,000	1,800,000	1,000,000	550,000	1,550,000
February	1,700,000	500,000	2,200,000	1,400,000	500,000	1,900,000
March	1,900,000	450,000	3,350,000	1,200,000	650,000	1,850,000
April	1,500,000	800,000	2,300,000	1,100,000	550,000	1,650,000
May	1,000,000	650,000	1,650,000	1,500,000	550,000	2,050,000
June	1,550,000	1,050,000	2,600,000	1,800,000	760,000	2,560,000
July	1,000,000	1,150,000	2,150,000	1,500,000	750,000	2,250,000
August	1,600,000	850,000	2,450,000	1,300,000	700,000	2,000,000
September	580,000	225,000	805,000	900,000	525,000	1,425,000
October	1,175,000	980,000	2,155,000	1,075,000	475,000	1,550,000
November	1,425,000	920,000	2,345,000	1,550,000	500,000	2,050,000
December	1,375,000	800,000	2,175,000	1,250,000	600,000	1,850,000
Total	16,305,000	8,675,000	24,980,000	15,575,000	7,110,000	22,685,000
Grand total	118,255,000	13,790,000	*132,045,000	38,225,000	15,290,000	53,515,000

CALIFORNIA PRODUCTION OF GASOLINE BY MONTHS
(Unit of Gallons)

	1925		1924		1923		1922	
	Gallons Total	Average Daily	Gallons Total	Daily Average	Total Gallons	Daily Average	Total Gallons	Daily Average
January	125,776,366	4,057,302	115,330,234	3,720,330	92,686,090	2,989,874	44,790,330	1,444,849
February	118,167,912	4,220,283	112,082,190	3,864,903	92,852,538	3,316,162	43,806,932	1,564,533
March	127,928,797	4,126,735	126,043,182	4,346,317	104,402,122	3,367,810	49,141,955	1,585,224
April	131,243,394	4,374,780	120,364,468	4,012,149	102,428,548	3,414,285	50,991,900	1,699,730
May	137,787,800	4,444,768	122,345,924	3,946,643	112,314,674	3,623,054	52,468,152	1,692,521
June	150,995,213	5,033,174	116,779,487	3,892,649	115,316,719	3,843,891	54,961,369	1,832,046
July	157,597,373	5,083,786	102,279,720	3,299,346	121,212,438	3,910,079	59,063,530	1,905,275
August	150,432,522	4,852,662	108,092,466	3,486,854	109,165,919	3,521,481	67,817,696	2,187,668
September	141,469,264	4,715,642	108,883,009	3,629,433	103,618,605	3,453,954	70,139,443	2,337,981
October	161,985,819	5,225,349	104,720,316	3,378,075	119,134,600	3,843,052	65,873,412	2,124,949
November	160,772,311	5,359,077	99,315,853	3,310,529	106,195,727	3,539,858	64,586,228	2,152,874
December	160,908,083	5,190,583	105,484,218	3,402,717	103,872,185	3,350,716	69,856,800	2,253,445
Total	1,725,064,854	4,726,205	1,341,721,097	3,665,905	1,283,200,165	3,515,617	693,497,748	1,899,994

CALIFORNIA PRODUCTION OF KEROSENE BY MONTHS
(Unit of Gallons)

	1925		1924		1923		1922	
	Total Gallons	Daily Average	Total Gallons	Daily Average	Total Gallons	Daily Average	Total Gallons	Daily Average
January	26,144,722	843,378	24,877,077	802,486	15,759,990	508,387	17,211,218	555,201
February	23,330,146	797,505	23,387,949	835,284	17,712,987	632,607	17,478,297	624,225
March	23,629,991	762,258	20,917,092	674,745	18,406,327	593,720	15,760,676	508,086
April	21,933,207	731,107	23,930,144	797,671	18,359,965	611,999	14,722,826	490,761
May	20,978,947	676,740	24,026,326	775,043	20,519,907	661,932	18,931,766	610,702
June	17,882,823	596,094	20,108,017	670,267	17,998,275	599,943	17,713,315	590,444
July	21,193,831	683,672	20,218,984	652,225	16,285,670	525,344	15,313,484	493,983
August	22,110,314	713,236	22,435,015	723,710	16,399,772	529,025	14,445,615	465,988
September	24,307,478	810,249	23,536,960	784,565	17,296,559	576,552	16,431,183	547,706
October	23,983,518	773,661	28,391,732	915,862	15,468,701	498,990	14,932,890	481,706
November	21,517,383	717,246	31,696,915	1,056,564	17,941,590	598,053	18,012,792	600,426
December	24,842,940	801,385	34,591,222	1,115,846	23,991,576	773,922	14,347,967	462,838
Total	270,855,300	742,069	298,117,433	814,529	216,140,319	592,165	195,292,029	535,047

CALIFORNIA CRUDE OIL PRODUCTION —JANUARY-DECEMBER, 1925, INCLUSIVE
(Barrels 42 U. S. Gallons)

	January	February	March	April	May	June	July	August	September	October	November	December	Total	Daily
Kern River	551,285	499,749	538,666	535,619	545,833	526,716	548,983	546,557	480,749	385,061	373,743	366,916	5,901,877	16,169
McKittrick	177,613	159,705	181,918	175,529	175,274	172,781	178,014	178,933	173,748	174,021	171,543	172,892	2,091,791	5,731
Midway-Sunset	3,283,272	2,915,998	3,184,282	3,059,766	3,213,009	3,068,468	3,077,082	3,154,726	3,112,070	3,107,420	2,886,254	2,861,055	36,923,402	101,160
Elk Hills	1,147,602	1,056,663	1,174,787	1,128,796	1,193,366	1,071,164	882,713	859,859	810,098	838,318	903,132	904,651	11,971,149	32,798
Lost Hills-Belridge	153,690	142,111	154,862	152,913	153,253	148,196	143,955	141,296	134,094	141,633	136,733	130,316	1,733,140	4,749
Coalinga	694,469	631,069	686,316	649,216	662,644	627,183	720,148	701,371	623,657	605,913	571,103	578,018	7,751,107	21,235
Wheeler Ridge	32,557	29,689	30,138	26,781	27,019	25,271	26,706	30,545	26,211	31,547	27,152	31,144	344,760	945
Watsonville	1,783	1,610	1,782	1,725	1,782	1,725	1,757	1,782	1,725	1,808	1,725	1,782	20,986	57
Santa Maria	233,330	207,345	228,289	239,795	225,053	216,314	232,944	235,307	232,098	202,962	169,115	174,029	2,596,581	7,114
Summerland	4,516	4,064	4,510	3,862	3,985	3,386	3,890	3,986	3,855	3,990	3,855	3,983	48,351	132
Ventura-Newhall	427,071	575,401	634,531	647,331	758,283	672,062	663,932	793,419	846,169	1,001,552	1,104,695	1,139,026	9,263,472	25,379
Los Angeles-Salt Lake	64,838	61,196	59,840	62,471	60,932	58,397	59,026	62,953	60,764	60,796	59,764	59,326	731,912	2,005
Whittier	58,210	57,578	62,984	59,840	59,083	58,472	66,065	61,920	61,476	63,067	61,744	62,243	742,676	2,035
Fullerton	372,221	328,008	357,158	340,344	357,799	340,245	347,864	389,621	403,360	412,678	399,433	432,712	4,481,443	12,278
Coyote	627,517	551,901	627,191	610,825	653,621	625,087	624,717	621,913	582,993	562,804	523,427	528,008	7,140,004	19,502
Santa Fe Springs	1,536,179	1,403,924	1,549,863	1,567,856	1,635,768	1,592,318	1,650,726	1,660,307	1,615,073	1,657,852	1,551,221	1,548,441	18,969,528	51,971
Montebello	602,277	539,942	573,908	566,223	580,992	566,084	579,392	557,282	563,875	595,974	556,094	561,151	6,843,194	18,748
Richfield	349,630	303,930	328,525	326,236	343,743	359,630	360,339	363,689	353,452	394,799	420,434	414,081	4,318,488	11,831
Huntington Beach	1,291,871	1,145,455	1,323,535	1,266,352	1,302,630	1,315,432	1,332,812	1,367,411	1,350,145	1,391,311	1,363,923	1,436,597	15,887,474	43,527
Long Beach	3,791,222	3,318,077	3,630,548	3,371,470	3,376,763	3,217,426	3,261,920	3,294,480	3,130,009	3,234,568	3,328,625	3,378,567	40,173,275	110,064
Torrance	1,295,416	1,160,176	1,202,558	1,152,505	1,140,937	1,107,710	1,080,822	1,110,306	1,043,343	1,004,439	966,936	976,965	13,242,113	36,280
Dominguez	1,766,435	1,430,109	1,509,474	1,355,850	1,145,691	960,962	939,686	916,242	863,765	857,609	809,507	773,487	13,328,817	36,517
Rosecrans	263,358	332,691	529,289	543,499	615,181	670,052	611,056	717,146	745,640	788,544	684,955	762,055	7,263,466	19,900
Inglewood	6,926	13,442	51,065	107,924	583,611	1,878,145	3,071,784	3,230,587	2,841,744	2,494,514	2,118,643	1,950,010	18,348,395	50,270
Newport	.....	.....	.....	6,925*	4,033	3,841	4,725	3,942	2,649	2,197	2,101	2,248	32,661	119
Total	18,743,288	16,869,833	18,626,019	17,959,653	18,830,328	19,288,135	20,411,049	21,005,580	20,062,763	20,015,076	19,095,907	19,249,711	230,147,342	630,541
Daily average, 1925	604,622	602,494	600,839	598,655	607,107	642,938	658,421	677,599	668,759	645,648	636,530	620,958		
Daily average, 1924	674,597	666,939	642,363	643,328	639,793	626,933	621,766	616,548	610,274	603,115	592,234	606,294		628,588
Daily average, 1923	530,885	586,670	632,522	689,865	694,689	755,670	814,906	852,903	858,750	792,787	745,595	706,427		722,545
Daily average, 1922	313,472	323,585	330,663	339,536	359,554	357,731	374,138	382,221	406,838	432,885	467,851	497,639		382,539
Daily average, 1921	325,401	328,104	338,544	338,992	336,941	337,045	329,844	343,227	261,980	227,865	293,616	325,631		313,882

*Production previously included with Huntington Beach.

the lease may be yet proven up as productive. The Marland's latest completion, on the other hand, seems to cast considerable doubt on the possibility of developing production on the Hellman lease.

10 New Fields in 8 Years.

During the past eight years ten new fields have been opened up in California: Inglewood and Rosecrans in 1924, Dominguez and Wheeler Ridge in 1923, Torrance in 1922, Long Beach and Santa Fe Springs in 1921, Huntington Beach in 1920, and Richfield and Elk Hills in 1919, and although wildcat work during 1925 did not reveal the existence of another productive territory, it was not because of any lack of work along this line. As a matter of fact, there was more real wildcatting done during 1925 than in any preceding calendar year and it is believed that operations during 1926 will be on a still larger scale. No potential area was exempted during 1925 from wildcat work and although a good deal of the drilling was of a rather promising character, a large part was undertaken upon competent geological advice. In view of the large territory prospected, it might be well at this time to make a superficial survey because of the influence which this work will have on future drilling. The Bandini area came in for considerable work during the year just closed and it was during this period removed from future consideration as potential oil land. The individual tests were No. 2 Bandini of the Wilshire abandoned at 5,400 feet, No. 1 Coutz of the Oak Ridge abandoned at 5,083 feet, No. 1 Vail of the Superior relinquished at 5,453 feet and No. 4 DeBaker of the Bandini Petroleum suspended at 4,140 feet. Several additional dusters had been chalked up against this area previous to 1925.

Inglewood's Peak

Inglewood was opened up in November, 1924, but did not reach its maximum development until the summer of 1925. Early work in this field led many to be-

(Continued on Page 104)

TOTAL STOCKS HELD AT ALL POINTS ON PACIFIC COAST
(In Barrels.)

On hand—	Heavy crude and fuel oil	Light crude over 20.0°	Saleable Gasoline	Naphtha Distillates	All other Commodities	Total fluid Stocks
January 1, 1925	57,254,796	40,574,578	10,957,487	9,396,613	6,838,490	125,021,964
January 31, 1925	57,858,955	42,262,361	11,748,056	8,652,985	7,486,313	128,007,770
February 28, 1925	58,714,880	42,629,850	12,058,682	7,888,410	8,042,788	129,334,610
March 31, 1925	59,483,993	43,501,830	11,833,460	7,356,018	8,701,656	130,876,957
April 30, 1925	61,291,606	44,432,153	11,675,831	6,769,291	9,066,725	133,235,606
May 31, 1925	63,448,259	45,261,831	11,363,943	6,435,416	9,308,112	135,817,561
June 30, 1925	66,284,706	44,682,095	10,406,430	6,293,472	9,370,537	137,037,240
July 31, 1925	69,915,093	44,198,326	9,751,143	6,188,559	9,862,459	139,915,580
August 31, 1925	76,354,315	41,216,021	9,687,158	6,418,152	9,356,293	143,031,939
September 30, 1925	79,762,139	42,487,578	9,668,725	6,681,547	9,408,267	148,008,256
October 31, 1925	81,287,549	43,401,862	9,935,079	6,478,534	9,918,761	151,021,885
November 30, 1925	82,149,489	44,057,343	10,015,112	6,373,852	9,764,934	152,360,730
December 31, 1925	82,849,057	44,345,837	10,172,562	6,548,483	9,879,743	153,795,682
Increase	25,594,261	3,771,259	784,925*	2,848,130*	3,041,253	28,773,718

*Decrease.

PRODUCTION OF CRUDE BY MONTHS—CALIFORNIA OIL DISTRICTS
(Barrels of 42 U. S. Gallons.)

Month—	1925 Total Barrels	1925 Daily Average	1924 Total Barrels	1924 Daily Average
January	18,743,288	604,622	20,912,500	674,597
February	16,869,833	602,494	19,341,226	666,939
March	18,626,019	600,839	19,913,262	642,363
April	17,959,653	598,655	19,299,849	643,328
May	18,820,328	607,107	19,833,576	639,793
June	19,288,135	642,938	18,807,999	626,933
July	20,411,049	658,421	19,274,755	621,766
August	21,005,580	677,599	19,112,998	616,548
September	20,062,763	668,759	18,308,233	610,274
October	20,015,076	645,648	18,696,559	603,115
November	19,095,907	636,530	17,767,034	592,234
December	19,249,711	620,958	18,795,126	606,294
Total	230,147,342	630,541	230,063,117	628,588

Month—	1923 Total Barrels	1923 Daily Average	1922 Total Barrels	1922 Daily Average
January	16,457,445	530,885	9,717,632	313,472
February	16,426,759	586,670	9,060,383	323,585
March	19,608,192	632,522	10,250,547	330,663
April	20,696,959	689,865	10,186,081	339,536
May	21,535,365	694,689	11,156,193	359,554
June	22,667,106	755,570	10,731,942	357,731
July	25,262,082	814,906	11,598,291	374,138
August	26,440,005	852,903	11,848,882	382,221
September	25,762,487	858,750	12,205,146	406,838
October	24,576,400	792,787	13,419,432	432,885
November	22,397,848	746,595	14,038,537	467,951
December	21,899,247	706,427	15,426,810	497,639
Total	263,728,895	722,545	139,626,876	382,539

Month—	1921 Total Barrels	1921 Daily Average	1920 Total Barrels	1920 Daily Average
January	10,087,424	325,401	8,509,805	274,510
February	9,186,907	328,104	8,001,910	276,928
March	10,494,863	338,544	8,583,110	276,875
April	10,169,759	338,992	8,284,434	276,148
May	10,445,171	336,941	8,644,432	278,853
June	10,111,361	337,045	8,187,958	272,998
July	10,225,171	329,844	8,511,847	274,576
August	10,020,027	343,227	8,985,449	289,853
September	7,859,394	261,980	9,126,538	304,218
October	7,063,807	227,865	9,459,528	305,146
November	8,808,468	293,616	4,322,022	310,734
December	10,094,549	325,631	10,002,383	322,658
Total	114,566,901	313,882	105,618,706	288,576

CALIFORNIA FIELDS OPERATIONS, BY MONTHS, FOR YEAR 1925

Month—	Wells Completed Number	Wells Completed Bbls. Daily	Wells—Drill'g	Wells—Prod'g	Abandoned—Drillrs	Abandoned—Prodrs	New Rigs
January	62	21,286	429	11,380	25	10	77
February	65	28,170	412	11,446	28	19	80
March	52	19,951	453	11,482	28	11	115
April	83	26,008	468	11,590	26	9	139
May	78	52,440	438	11,628	18	17	88
June	119	73,150	436	11,680	27	9	106
July	102	88,941	432	11,579	36	15	130
August	98	68,202	394	11,675	18	6	85
September	80	41,978	365	11,093	27	11	77
October	69	35,678	372	11,066	32	7	91
November	85	28,404	363	11,029	39	14	102
December	55	22,761	448	11,069	34	13	172
Total 1925	948	506,969			338	141	1,262
Total 1924	1,238	508,944			336	251	1,240
Total 1923	980	1,376,279			293		1,327
Total 1922	801	524,397			204		1,379
Total 1921	684	187,567			162		925
Total 1920	587	169,500			159		692
Total 1919	558	114,870			211		692
Total 1918	597	126,925			155		607
Total 1917	749	128,296			162		766
Total 1916	619	103,765			214		672
Total 1915	333	75,385			175		176
Total 1914	438	176,395			129		224
Monthly average, 1925	79	42,247	417	11,393	28	12	105
Monthly average, 1924	103	42,412	510	10,903	49		130
Monthly average, 1923	82	114,690	759	8,928	24		111
Monthly average, 1922	67	43,700	605	9,410	17		115
Monthly average, 1921	57	15,631	536	9,425	14		90
Monthly average, 1920	49	14,125	403	9,299	13		77
Monthly average, 1919	47	9,572	340	8,774	18		58
Monthly average, 1918	50	10,577	362	8,210	13		50
Monthly average, 1917	62	10,690	361	7,398	14		64
Monthly average, 1916	52	8,647	328	6,542	18		56
Monthly average, 1915	28	6,282	153	6,016	15		14
Monthly average, 1914	37	14,700	222	5,867	11		19

CALIFORNIA FIELD OPERATIONS, BY DISTRICTS, FOR YEAR 1925

District—	Wells Completed Number	Wells Completed Bbls. Daily	Wells—Drill'g	Wells—Prod'g	Abandoned—Drillrs	Abandoned—Prodrs	New Rigs
Kern River	19	936	3	1,995	1	2	19
McKittrick	4	266	9	299	6	...	19
Midway-Sunset	182	51,795	55	2,927	27	10	219
Elk Hills	28	9,307	6	244	3	1	28
Lost Hills-Belridge	3	95	2	317	...	1	4
Coalinga	20	374	5	996	2	4	26
Wheeler Ridge	10	788	3	18	5	...	8
Watsonville	...	.....	...	6	...	...	...
Santa Maria	9	1,395	9	298	5	...	10
Summerland	...	.....	...	135	...	...	...
Ventura-Newhall	45	60,164	42	581	20	2	73
Los Angeles-Salt Lake	1	890	...	388	...	35	1
Whittier	7	682	5	184	9	...	6
Fullerton	7	5,755	6	394	1	1	11
Coyote	3	735	2	226	...	2	6
Santa Fe Springs	4	1,114	2	357	15	16	5
Montebello	8	1,233	5	159	3	2	10
Richfield	9	3,610	6	181	4	...	9
Huntington Beach	42	9,186	16	326	11	7	36
Long Beach	105	35,160	42	553	50	13	232
Torrance	111	14,241	12	587	17	40	66
Dominguez	32	29,680	10	57	5	3	14
Rosecrans	113	76,638	55	70	12	...	127
Inglewood	178	202,458	21	89	13	2	218
Newport	4	467	4	6	7	...	13
Miscellaneous	...	.....	95	.....	122	...	95
Total	948	506,969	417	11,393	338	141	1,262

INGLEWOOD DEVELOPMENT WORK

	Completed Number	Completed Output	Wells—Drilling	Wells—Producers	Abandoned—Drillers	Abandoned—Producers	New Rigs
1925—							
January	2	212	6	4	...	...	9
February	2	410	11	6	...	...	7
March	8	2,675	19	14	...	...	25
April	9	2,894	31	23	1	...	37
May	20	24,845	40	39	...	...	38
June	42	49,371	39	83	1	...	47
July	38	61,786	31	118	...	...	21
August	23	28,762	23	140	2	...	15
September	15	15,995	11	151	2	...	4
October	7	6,212	11	154	5	1	6
November	7	6,461	11	162	1	1	13
December	5	2,835	16	171	1	...	6
Total, 1925	178	202,458			13	2	218
Total, all time	180	202,823			14	2	222

INGLEWOOD CRUDE PRODUCTION 1924-1925 INCLUSIVE

	Production—Monthly	Production—Daily	No. of wells Producing	Daily Prod. per Well
1925—				
January	6,926	223	4	56
February	13,442	480	6	80
March	51,065	1,647	14	118
April	107,924	3,597	23	156
May	583,611	18,826	39	483
June	1,878,145	62,605	83	754
July	3,071,784	99,090	118	840
August	3,230,587	104,212	140	744
September	2,841,744	94,728	151	627
October	2,494,514	80,468	154	523
November	2,118,643	70,621	162	436
December	1,950,010	62,904	171	368
Total	18,348,395	50,270		
Total, all time	18,358,840	37,698		

ROSECRANS DEVELOPMENT WORK

	Completed Number	Completed Output	Wells—Drilling	Wells—Producers	Abandoned—Drillers	Abandoned—Producers	New Rigs
1925—							
January	7	3,825	50	23	3	...	11
February	6	4,677	56	29	...	...	15
March	9	7,560	74	40	...	...	28
April	8	4,495	88	47	3	...	32
May	11	16,201	72	57	1	...	4
June	15	7,922	74	64	2	...	25
July	11	5,731	72	72	...	...	11
August	22	12,344	50	87	...	...	4
September	7	4,339	39	91	1	...	1
October	6	2,436	35	103	...	...	4
November	8	2,010	28	109	1	...	4
December	3	5,098	23	113	1	...	1
Total, 1925	113	76,638			12	...	127
Total, all time	134	93,968			13	...	231

ROSECRANS CRUDE PRODUCTION—1925

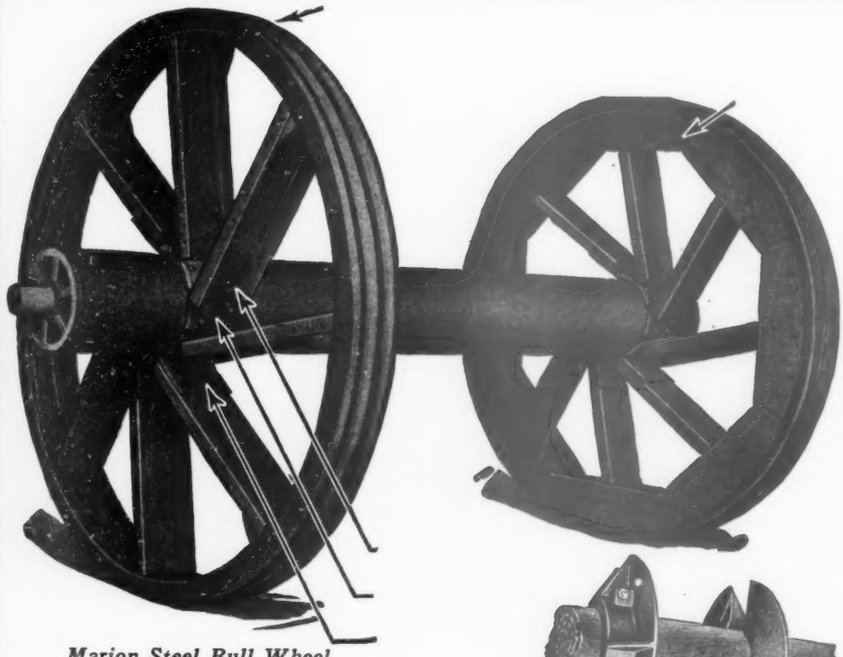
	Production—Monthly	Production—Daily	No. of wells Producing	Daily Prod. per Well
1925—				
January	263,358	8,495	23	369
February	332,691	11,882	29	410
March	529,289	17,074	40	427
April	543,499	18,117	47	385
May	615,181	19,845	57	348
June	670,052	22,335	64	349
July	611,056	19,713	72	274
August	717,146	23,134	87	266
September	745,640	24,855	91	272
October	788,544	25,437	103	247
November	684,955	22,832	109	209
December	762,055	24,582	113	218
Total	7,263,466	19,900		
Total, all time	7,874,898	12,910		

DOMINGUEZ DEVELOPMENT WORK

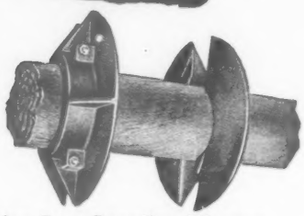
	Completed Number	Completed Output	Wells—Drilling	Wells—Producers	Abandoned—Drillers	Abandoned—Producers	New Rigs
1925—							
January	5	6,806	26	44	1	...	2
February	6	7,599	21	50	...	...	...
March	4	3,096	17	53	...	...	2
April	3	1,955	11	54	...	...	3
May	2	752	13	56	...	...	2
June	3	1,696	7	56	1	...	1
July	3	1,925	6	59	1	...	2
August	4	3,710	4	59	...	...	3
September	1	725	6	63	1	1	...
October	1	1,616	4	66	...	...	...
November	...	.....	2	64	1	...	...
December	...	.....	3	62	...	1	...
Total, 1925	32	29,680			5	3	14
Total, all time	74	118,004			18	3	99

DOMINGUEZ CRUDE PRODUCTION—1925

	Production—Monthly	Production—Daily	No. of wells Producing	Daily Prod. per Well
1925—				
January	1,766,435	56,982	44	1,295
February	1,430,109	51,075	50	1,022
March	1,509,474	48,693	53	919
April	1,355,850	45,195	54	837
May	1,146,691	36,958	56	660
June	960,962	32,032	56	572
July	939,686	30,312	59	561
August	916,242	29,556	59	535
September	863,765	28,792	63	457
October	857,609	27,665	66	419
November	809,507	26,984	64	422
December	773,487	24,951	62	402
Total	13,328,817	36,517		
Total, all time	20,298,046	23,796		

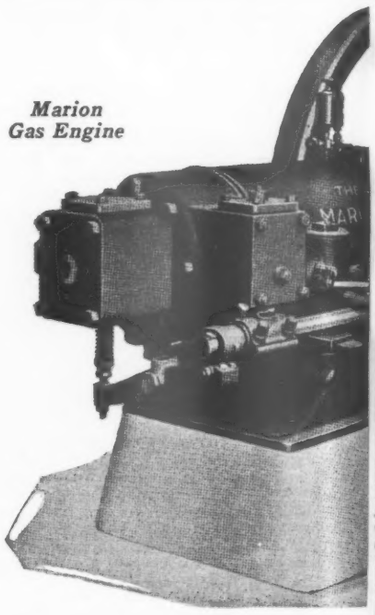


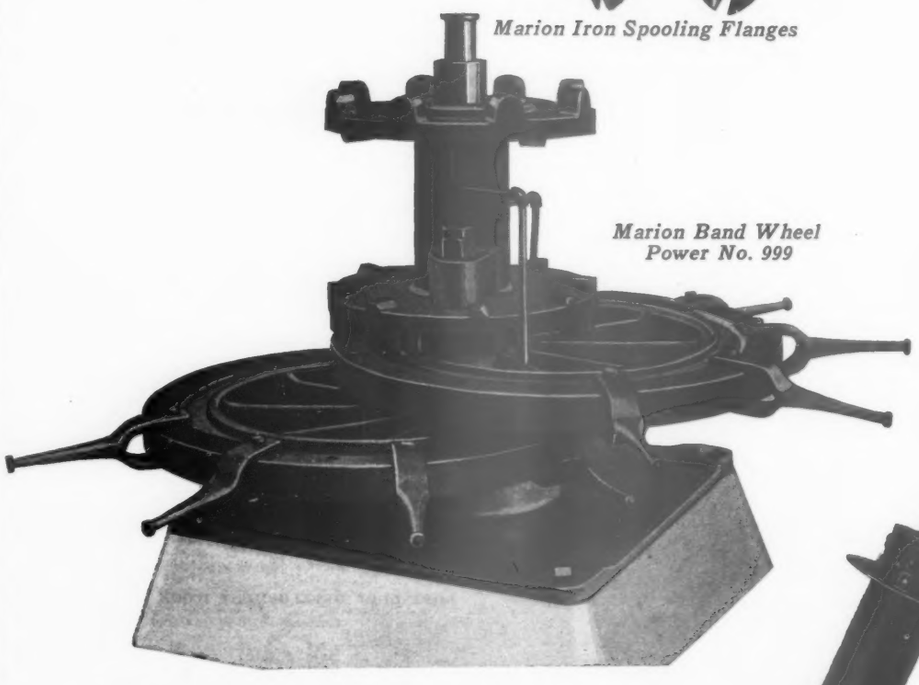
Marion Steel Bull Wheel



Marion Iron Spooling Flanges

Marion Gas Engine





Marion Band Wheel Power No. 999

It's the Team Work That

A draft horse and gasoline tractor have power, but they don't "hit it off" well when hitched together. They don't usually synchronize; however, two drafts pulling together are "some horses" and a single tractor is "a bear for eating up work."

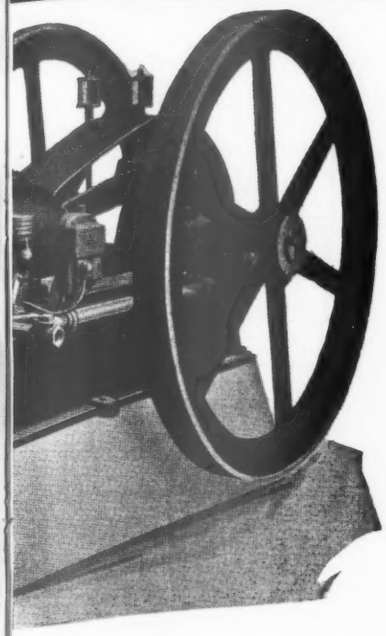
Because there is great economy and volume attained by using one make of standardized machinery, we offer a large line of *metal* equipment for the oil fields.

The following Bulletins will tell you about it. Any of these will be mailed to you on request.

Marion Machine, Foundry

Marion Chain Driven Sand Reel

Marion Steel Pony Wheel



Marion Peerless Reversible Clutch

Marionhill Pitman

Turns the Trick

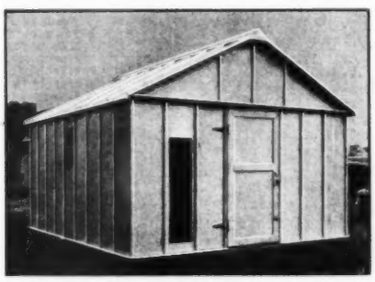
No. 198 Marion Steel Bull Wheels
No. 199 Marion Steel Derricks
No. 200 Irish Pulling Machines
No. 202 Marion Peerless Reversible Clutch
No. 203 Marion Gas Engines
No. 205 Marion Band Wheel Powers
No. 206 Marion Sand-Roof Working Barrel
No. 214 Marion Hi-Test Sucker Rods
No. 217 Marionhill Pitmans
No. 230 Marion Metal Buildings

Use the Marion Line of Oil Well Machinery and know what it means to get full production through the principle of team work.

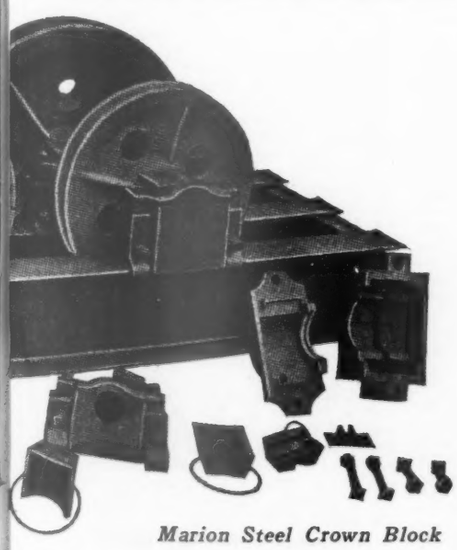
& Supply Co., Marion, Indiana

Marion Hi-Test Sucker Rods

(Name registered)

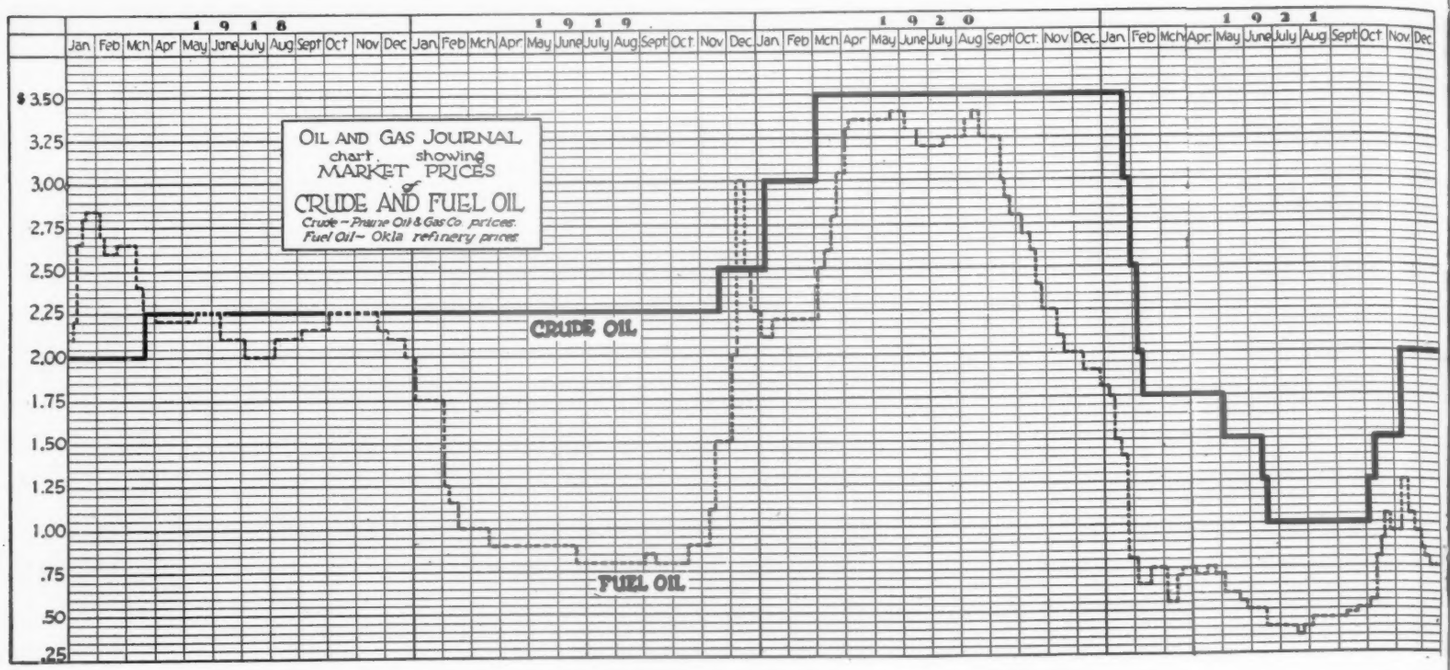


Marion Metal Buildings for the Oil Fields



Marion Steel Crown Block

Marion All-Metal Band Wheel



Date	Price Crude	Price Fuel Oil
1918—		
January 1	$ 2.00	$2.10
January 5	....	2.20
January 10	....	2.65
January 15	....	2.80
January 20	....	2.81
February 4	....	2.70
February 10	....	2.60
February 25	....	2.65
March 12	....	2.40
March 17	....	2.25
March 19	2.25	....
April 2	....	2.20
May 14	....	2.25
June 8	....	2.10
July 4	....	2.00
August 5	....	2.10
September 4	....	2.15
October 3	....	2.25
November 25	....	2.15
December 5	....	2.10
December 20	....	2.00
1919—		
January 2	....	1.75
February 3	....	1.25
February 9	....	1.15
February 20	....	1.00
March 21	....	.90
June 21	....	.80
September 2	....	.85
September 12	....	.80
October 17	....	.90
November 8	....	1.10

Date	Price Crude	Price Fuel Oil
November 15	....	1.50
November 20	2.50	....
December 2	....	2.00
December 8	....	3.00
December 16	....	2.50
December 21	....	2.25
1920—		
January 2	....	2.10
January 6	3.00	....
January 16	....	2.20
March 1	3.50	....
March 3	....	2.50
March 12	....	2.60
March 18	....	2.80
March 26	....	3.05
April 3	....	3.30
April 6	....	3.35
May 25	....	3.40
June 7	....	3.30
June 20	....	3.20
July 14	....	3.25
August 6	....	3.35
August 14	....	3.40
August 27	....	3.25
September 13	....	3.00
September 16	....	2.90
September 27	....	2.80
October 8	....	2.70
October 15	....	2.60
October 18	....	2.40
October 28	....	2.25
November 12	....	2.10

Date	Price Crude	Price Fuel Oil
November 18	....	2.00
December 10	....	1.90
December 29	....	1.80
1921—		
January 6	....	1.75
January 12	....	1.50
January 20	....	1.40
January 24	3.00	....
January 28	....	.80
January 31	2.50	....
February 4	2.00	.65
February 9	1.75	....
February 19	....	.75
March 4	....	.55
March 14	....	.70
March 21	....	.75
April 3	....	.70
April 16	....	.75
April 20	....	.70
May 2	1.50	....
May 3	....	.60
May 21	....	.55
May 28	....	.50
June 13	1.25	....
June 16	1.00	.40
June 20	....	.35
July 26	....	.40
August 6	....	.45
September 10	....	.47½
September 21	....	.50
October 1	1.25	....
October 6	....	.55

Date	Price Crude	Price Fuel Oil
October 7	1.50	....
October 10	....	.80
October 15	....	.90
October 19	....	1.05
October 24	....	.95
November 7	2.00	....
November 8	....	1.25
November 16	....	1.05
November 20	....	.95
December 1	....	.85
December 5	....	.80
December 12	....	.75
1922—		
January 1	....	.85
January 5	....	.80
February 1	....	.85
Feburary 14	....	.90
March 2	....	.85
March 10	....	.80
March 16	....	.85
April 9	....	.80
April 15	....	.75
May 9	....	.85
May 15	....	.90
May 20	....	.95
June 1	....	1.00
June 9	....	1.05
July 8	....	1.00
July 15	1.75	.90
July 18	....	1.50
July 22	....	1.10
August 2	1.25	1.05

CALIFORNIA REMAINS AN IMPORTANT FACTOR

(Continued from Page 101)

lieve that the wells would be small, shallow producers, but with the advent of one or two large flowing wells, the entire area was drilled up within a short space of time, due to the ease of drilling, shallow depth at which production was secured and small expenditure required. Many of these 2,000-foot holes were located and drilled into the pay within three weeks time and as a result, production jumped from a total of 6,926 bbls. during January, 1925, to a high of 3,230,587 bbls. during August. The field has practically been entirely drilled up so far as big production is concerned, although the Pacific and Standard companies still have some undeveloped acreage. The Standard, in particular, has considerable acreage yet to be drilled, but for the most part, the wells will be comparatively small and the drilling done rather conservatively. No conclusive deep test has yet been drilled in the center of the field and hence nothing definite is known of the possibility of developing a deeper producing horizon. It is generally believed, however, that a deep sand does exist and that a test favorably located with respect to structure will prove its existence. Some work along this line is anticipated during the summer of 1926 and it might be well to follow these tests closely. Dominguez also has a possibility of showing deep production but it is problematical just when a favorable test will be drilled in that area. Several deep holes have already been put down at Dominguez, but they, too, have been outside the proven limits of the present horizon and hence cannot be considered of any particular value. It is no secret, however, that the Union, Shell and Associated companies will be gravely disappointed if deeper drilling is unsuccessful.

Obispo's Important Find

In the northern part of the State, the most important development from a production standpoint was the bringing in of the Obispo Oil Co.'s No. 6, located in the Maricopa Flats in Section 32-12-23. The well originally came in doing between 6,000 and 7,000 bbls. a day, but it has not yet been definitely determined whether the flow is coming from a well-defined oil zone or from the Maricopa brown shale. The latter theory is generally accepted and the new work resulting from this discovery should prove conclusively within a short time which is correct and give some idea of the potentiality of this district.

Ventura Avenue Field Undefined

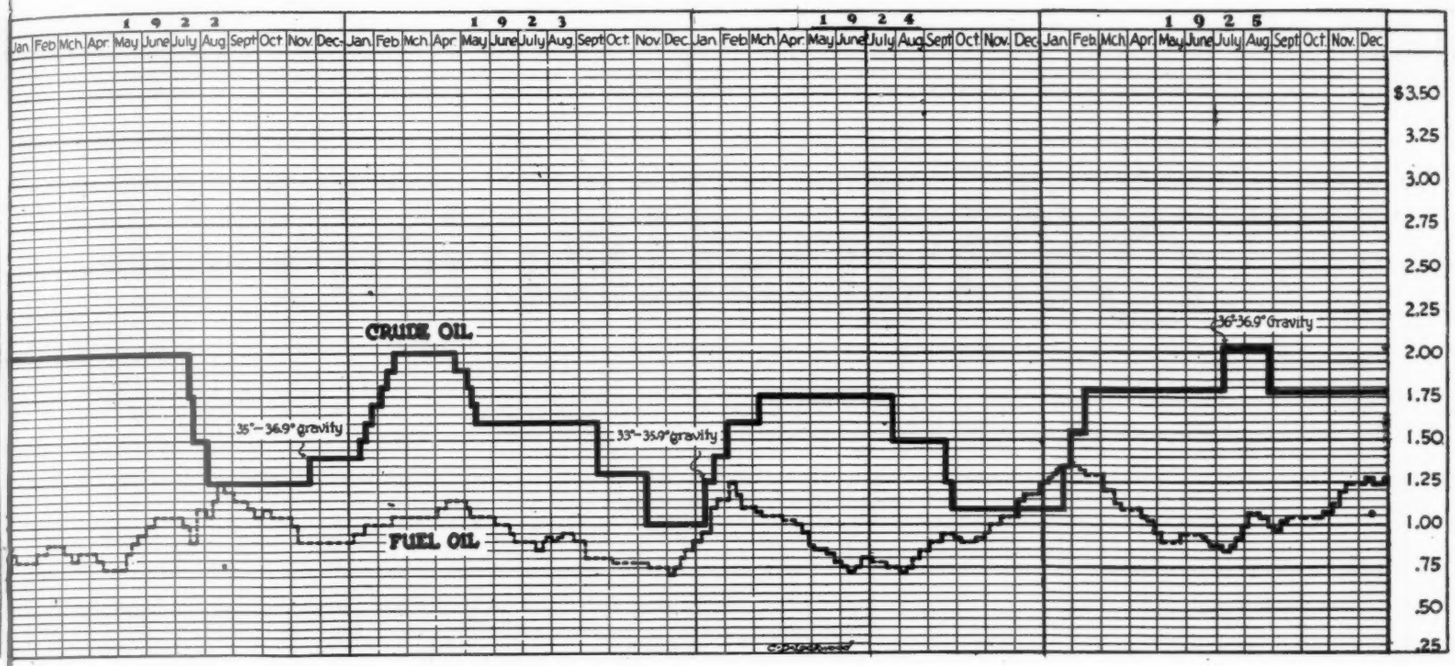
In the Coastal region, the most important work consisted of development of the Ventura Avenue Field and although the outer limits are still undetermined, the productive area should be fairly well established some time during the next several months. Drilling during the past year not only extended the field, but also revealed the fact that the zone afforded a deeper penetration with a corresponding increase in production. The Associated controls the greater part of the present proven acreage, other companies, including the General Petroleum and Shell, holding smaller but nevertheless, highly productive leases. The oil is of a very high quality and operators in the area naturally have a very good reserve when production in other fields declines.

The Temescal Petroleum, Doheny interests, also developed some new production in Ventura County, the company having successfully completed two shallow pumpers on what appears to be a small closed structure near Piru in Section 4-4-18. The oil runs around 18 degrees in gravity and although the lease should be good for around 2,000 bbls. a day, no unusual increase in drilling is anticipated until this quality oil again commands better prices. Stone & Goodwin developed a new deep sand in Cat Canyon, Santa Barbara County, their new well coming in doing 175 bbls. daily from 3,458 feet. The oil, which tests 16.4 degrees, is superior to that secured from the shallow zone heretofore developed but in view of the fact that the gasoline content is quite low and the property held in fairly large blocks, only a limited amount of work is expected to be done during 1926.

Ever since the discovery of Santa Fe Springs, operators have been looking for a kindred structure in that locality and, while several have concentrated work around Bandini, others have wildcatted near La Mirada and Los Nietos. All three areas have been tested out fairly well, although the Union Oil Co. is preparing to start a new wildcat near La Mirada at a point far enough removed from previous abandonments to give the company a good chance of opening up another new field. The Associated Oil Co. pulled out of this general area after going to 6,018 feet in No. 1 McNally, while the Shell went to 5,937 feet in No. 1 Stubbs. The Standard got a 5,770-foot duster in No. 1 Culp at Los Nietos and quit-claimed its holdings some time ago. The Union has been extremely successful during the past several years but failed in 1925 to add any new fields in California to its credit, although the two tests started last year on the Olinda property at Fullerton may open up some additional acreage for drilling early in 1926. The company negotiated a deal early in the year whereby it took over the property of the Olinda Land Co., aggregating approximately 2,500 acres with the proviso that two wildcats should be spudded in immediately. This was done but the two holes have been held up for several months with mechanical trouble. Considerable prospecting was done by the company, however, including a duster at Ocean Park Heights, abandoned at 5,878 feet, one at Newhall and another at Rio Bravo in Section 4-29-25, abandoned at 6,053 feet. Other operators still hold several hundred acres at Rio Bravo and in view of the fact that additional leases have been signed during the past few months, it would not be at all surprising if additional work was undertaken this year. This is a big area and certainly warrants more drilling before being classed as undesirable.

Associated's Wildcatting Campaign

The Associated Oil Co. stepped out during 1925 and did considerable wildcatting and although the company was not



Date	Price Crude	Price Fuel Oil
August 7	....	1.15
August 14	....	1.25
August 25	....	1.20
September 1	....	1.15
September 15	....	1.10
September 24	....	1.05
October 1	....	1.10
October 10	....	1.05
November 1	....	1.00
November 8	....	.90
November 22 (35°-36.9)	1.40	....
1923—		
January 5	....	.95
January 13	1.50	....
January 17	1.60	1.00
February 27	1.70	....
February 2	1.80	....
February 10	1.90	....
February 15	....	1.05
February 17	2.00	....
April 8	....	1.10
April 14	....	1.15
April 23	1.80	....
May 2	1.80	....
May 5	1.70	1.05
May 12	1.60	....
June 3	....	1.00
June 19	....	.90
June 24	....	.90
July 15	....	.85
July 21	....	.90
July 26	....	.92½

Date	Price Crude	Price Fuel Oil
August 1	....	.90
August 6	....	.92½
August 12	....	.95
August 27	....	.90
September 9	....	.80
September 19	1.30	....
October 5	....	.77½
November 8	1.00	....
November 10	....	.75
December 1	....	.70
December 7	....	.75
December 14	....	.80
December 21	....	.85
December 29	....	.90
1924—		
January 8	....	.95
January 9	1.25	....
January 15	....	1.10
January 19	1.40	....
January 22	....	1.15
February 2	1.60	....
February 5	....	1.25
February 12	....	1.17½
February 19	....	1.10
March 4	....	1.07½
March 8	1.75	....
March 11	....	1.05
April 1	....	1.02½
April 15	....	1.00
April 22	....	.95
April 29	....	.87½
May 6	....	.85

Date	Price Crude	Price Fuel Oil
May 20	....	.82½
May 27	....	.77½
June 3	....	.75
June 10	....	.72½
June 17	....	.75
June 24	....	.80
July 1	....	.77½
July 22	....	.75
July 28	1.50	....
August 5	....	.72½
August 12	....	.75
August 19	....	.80
August 26	....	.85
September 2	....	.90
September 16	....	.95
September 17	1.25	....
September 27	1.10	....
September 30	....	.92½
October 7	....	.90
October 21	....	.92½
October 28	....	.95
November 4	....	1.00
November 15	....	1.05
December 2	....	1.15
December 9	....	1.17½
December 30	....	1.25
1925—		
January 6	....	1.27½
January 13	....	1.30
January 20	....	1.32½
January 22	1.35	....
January 27	....	1.35

Date	Price Crude	Price Fuel Oil
January 30	1.55	....
February 10	....	1.32½
February 12	1.80	....
February 17	....	1.30
March 3	....	1.20
March 17	....	1.12½
March 24	....	1.10
April 14	....	1.05
April 21	....	1.02½
April 28	....	.95
May 5	....	.90
May 26	....	.95
June 16	....	.92½
June 23	....	.90
June 30	....	.87½
July 7	....	.85
July 14	....	.87½
July 21	....	.92½
July 28	....	1.00
August 4	....	1.07½
August 18	....	1.05
August 25	....	1.00
August 27 (33°-33.9)	1.55	....
September 1	....	.97½
September 8	....	1.02½
September 15	....	1.05
October 27	....	1.07½
November 3	....	1.12½
November 10	....	1.20
November 17	....	1.25
December 8	....	1.27½
December 15	....	1.25
December 29	....	1.27½

successful in opening up a new field, the executives are to be congratulated on their aggressive policy. The company made vast strides during the year in developing production, principally at Inglewood and Ventura, and has unlimited possibilities if advantage is taken of the opportunity to push sales ahead as soon as prices return to normalcy. The Associated did not concentrate its wildcat work on any particular area, the scope of its operations being statewise. Considerable prospecting was done around Raisin City where indications looked rather promising at one time, but with the exception of some gas and oil colors, neither of these holes, nor those drilled at Caruthers and Kerman, showed any unusual promise. The company also tested a prospective structure near Saugus, but the hole was abandoned at 5,789 feet late in the year. Although the Chanslor-Canfield Midway Oil Co. had the distinction of opening up the Torrance Field, the company has not done any considerable amount of wildcatting since that time, its efforts during the past year being concentrated in the above distict. The company did, however, take over the Sentinel Oil Co.'s 2,100-foot test near Delano in Section 20-25-27 on a royalty asis hoping also to prove up its holdings in the general vicinity. Some oil indications have been reported but the company has spent several months trying to secure production without success. It is the general consensus of opinion that the area will not prove commercially productive but work is, nevertheless, going right ahead. Late in the year the company started drilling on No. 1 Hobson in Section 22-3-24, Ventura County, but it will be several months before work is concluded. This wildcat might bear watching in view of the fact that a previous shallow hole showed considerable gas.

Probably one of the most interesting wildcats abandoned during 1925 was the Shell's No. 1 Los Cerritos on the grounds of the Virginia Country Club in the present northwest extension of the Long Beach Field. The company's geological staff had the right hunch, but unluckily the location was just a trifle too far north and east, the 5,461 feet of hole being dry from top to bottom. The Associated and Pacific, following the opening up of this extension some time later, leased the western part of this property originally held by the Shell. The Standard charged off several wildcats to experience during the year just closed, the company's operations covering all parts of the State. At San Emidio one test in Section 5-10-22 was abandoned at 2,254 feet and a second at 5,660 feet. Two wildcats were also put down in the vicinity of Lost Hills, the one in Section 5-27-20 being carried down to 5,636 feet. No. 1 Irvine at Paulerino in southern California cost the company 3,355 feet of hole, while No. 1 Hadley near Rivera was abandoned at 5,900 feet. When the Rideout Heights boom started, the Standard took over the Home Oil Co.'s property on very advantageous terms and drilled a deep test on this lease and another on the Patton property, the latter being carried down to 6,050 feet. The company's present wildcat work consists of a couple of tests in the northern part of the State and one at Santa Ana Gardens. Another, No. 1 Plavan, is just being put down about 2 miles south of the city of Santa Ana, while still another on the Argabrite property, is being prepared for a spud in Ventura County near Montalvo.

(Continued on Page 158)

CALIFORNIA DAILY AVERAGE CRUDE PRODUCTION BY DISTRICTS—JANUARY-DECEMBER, INCLUSIVE

Districts—	1925	1924	1923	1922	1921	1920	1919	1918	1917
Kern River	16,169	18,506	18,674	20,047	18,357	20,377	20,907	22,083	23,543
McKittrick	5,731	5,723	6,005*	6,623	5,672	7,106	7,773	8,385	9,974
Midway-Sunset	101,160*	102,363*	76,172*	51,356	78,902	83,788	88,908	95,429	101,628
Elk Hills	32,798*	37,130*	22,396*	32,578	49,549	19,853	77	.....	.....
Lost Hills-Belridge	4,740*	4,170*	5,051*	7,712	8,934	11,362	12,770	14,567	17,423
Coalinga	21,236*	27,713*	14,276*	25,094	34,307	42,888	44,956	44,823	43,559
Wheeler Ridge	945	935	352	.....	.....	.....	.....	.....	.....
Watsonville	57	58	58	56	50	50	50	50	50
Santa Maria	7,114*	7,808*	8,229*	10,405	14,973	15,869	16,665	19,747	16,393
Summerland	132	145	145	133	98	98	98	98	98
Ventura-Newhall	25,379	10,984	10,144	8,262	5,762	5,601	4,858	3,827	3,115
Los Angeles-Salt Lake	2,005	2,480	3,266	3,447	3,601	3,608	3,625	3,691	3,981
Whittier	2,035	2,080	1,768	1,966	2,015	2,300	2,774	2,866	3,127
Fullerton	12,278*	11,256*	11,136*	12,364	16,334	14,309	12,017	11,943	12,411
Coyote	19,562	16,529*	6,706*	19,179	20,326	23,859	27,952	34,563	31,393
Santa Fe Springs	51,971	72,130	218,579	30,227	571	.....	.....	.....	.....
Montebello	18,748	17,023	11,166*	18,334	24,838	36,395	33,153	18,735	2,200
Richfield	11,831*	12,180*	16,771*	22,780	22,485	7,009	2,646	8	.....
Huntington Beach	43,527	47,906	94,125	30,601	6,901	104	.....	.....	.....
Long Beach	110,064	164,268	188,521	50,851	207	.....	.....	.....	.....
Torrance	36,280*	47,886	8,572	523	.....	.....	.....	.....	.....
Dominguez	36,517	18,611	432	.....	.....	.....	.....	.....	.....
Rosecrans	19,990	1,671	.....	.....	.....	.....	.....	.....	.....
Inglewood	50,270	29	.....	.....	.....	.....	.....	.....	.....
Newport	119	.....	.....	.....	.....	.....	.....	.....	.....
Total	630,541	628,588	722,545	382,539	313,882	288,576	279,199	281,215	267,895

*Some production curtailed.

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TONKAWA
TULSA
WETUMKA
WEWOKA

KANSAS
ELDORADO
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Great Producing Year in Oklahoma

State Fell Short of 1924 Record, But Its Output in 1925, 173,270,063 Barrels, Surpassed Any Other Past Year. Deep Sands Yield Largely

By James McIntyre

Up to the close of 1925 the State of Oklahoma had produced a total of 1,871,008,139 bbls. of crude petroleum and before the close of the present year will have passed the 2,000,000,000-mark. To better grasp just what Oklahoma has done in the way of producing oil it may be well to remember that it took from 1859 until the end of 1909 or about 49 years and 5 months for all the fields in the United States including Oklahoma, to pass the 2,000,000,000-bbl. mark. Oklahoma alone will have done it in 21 years, starting from the opening of the Glenn Pool, the first large field in the State, and leaving the production of the first 15 years, 1889 to 1903 inclusive, out of consideration.

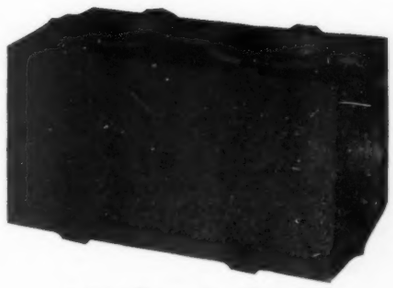
Last year the State produced 173,270,063 bbls. or 2,936,334 bbls. short of its 1924 record of 176,206,397 bbls but 8,256,378 bbls more than its 1923 record of 165,013,685 bbls. Yet, if one looks at 1926 oil map of Oklahoma now and one made in 1923, very few new pools are apparent. One will find Braman, which first broke into the production column in September, 1924; Hambro, Jefferson County, which first went into the records in October, 1924; Sholom Alechem, Carter County, which started producing in May, 1924; Otoe, or Watchorn, in Pawnee County, first appearing in February, 1924; Yeager, in Hughes County, opened in March, 1925; Masham, Pawnee County, which started off early in the past year; Davenport, Lincoln County, and Kendrick in the same county, which entered the record in February, 1925, and Madill, Marshall County, which as a matter of fact is a very old field, which had produced a modicum of high grade oil that was so small that it was never put into the records. Of all the fields above mentioned only Davenport, Braman and Thomas reached the major class (15,000 bbls a day as an average for a

PRODUCTION OF OKLAHOMA BY COUNTIES IN 1925

	January Barrels	February Barrels	March Barrels	April Barrels	May Barrels	June Barrels	July Barrels	August Barrels	September Barrels	October Barrels	November Barrels	December Barrels	Total 1925 Barrels
WASHINGTON COUNTY:													
Daily average...	6,004	6,046	6,059	6,094	6,091	6,066	6,238	6,216	6,157	6,076	5,960	5,680	
Month.....	186,124	169,288	187,829	182,820	188,821	181,980	193,378	192,696	184,710	188,356	178,800	176,080	2,210,882
NOWATA-ROGERS COUNTIES:													
Daily average...	5,511	5,522	5,516	5,514	5,515	5,539	5,888	5,810	5,769	5,821	5,802	5,760	
Month	170,841	154,616	170,996	165,420	170,965	166,170	182,528	180,110	173,070	180,451	174,060	178,560	2,067,787
OSAGE-EASTERN KAY COUNTIES:													
Burbank—													
Daily average...	58,644	56,965	56,432	59,034	56,862	57,611	55,652	54,293	55,320	50,657	48,672	46,187	
Month	1,817,964	1,595,020	1,749,892	1,771,020	1,762,722	1,728,330	1,725,212	1,683,083	1,659,600	1,570,367	1,460,160	1,431,797	19,954,667
Other Osage Fields—													
Daily average...	36,165	37,253	34,160	34,468	34,648	32,495	32,987	32,947	34,038	33,498	34,135	33,415	
Month	1,121,115	1,043,056	1,058,960	1,034,040	1,074,088	974,850	1,022,597	1,021,357	1,021,140	1,038,438	1,024,050	1,036,865	12,469,556
TULSA-WAGONER COUNTIES:													
Bird Creek, Owasso, etc.—													
Daily average...	4,216	3,976	3,971	3,999	3,462	3,657	3,428	3,500	3,086	3,105	3,006	3,102	
Month	130,696	111,328	123,101	119,970	107,322	109,910	106,268	108,500	92,580	96,255	90,180	96,162	1,292,072
Bird Creek, Sand Springs, Bruner, Turkey Mtn., Fisher—													
Daily average...	3,865	3,883	3,166	2,640	3,228	3,311	4,065	3,589	3,050	2,813	2,764	2,712	
Month	119,815	108,724	98,146	79,200	100,068	99,330	126,015	111,259	91,500	87,203	82,920	84,072	1,188,252
Bixby, Leonard, Jenks—													
Daily average...	1,808	1,806	1,801	1,740	1,867	1,841	1,511	1,406	1,405	1,407	1,398	1,360	
Month	56,048	50,568	55,831	52,200	57,877	55,230	46,841	43,586	42,150	43,617	41,940	42,160	588,048
Broken Arrow, Coweta—													
Daily average...	1,354	1,340	1,327	1,268	1,376	1,305	1,388	1,314	1,311	1,301	1,273	1,291	
Month	41,974	37,520	41,137	38,040	42,656	39,150	43,028	40,734	39,330	40,331	38,190	40,021	482,111
OKMULGEE AND MUSKOGEE COUNTIES:													
Mounds, Beggs, Hamilton Switch, Youngstown—													
Daily average...	12,136	12,022	11,498	11,316	11,311	11,114	10,983	10,406	10,007	9,992	11,007	10,715	
Month	376,216	336,616	356,438	339,480	350,641	333,420	340,473	322,586	300,210	309,752	330,210	332,165	4,028,207
Bald Hill, Stone Bluff and Haskell—													
Daily average...	2,423	2,131	2,306	2,620	3,273	3,011	3,310	3,664	3,599	3,615	3,954	3,811	
Month	75,113	59,668	71,486	78,600	101,463	90,330	102,610	113,584	107,970	112,065	118,620	118,141	1,149,650
Morris, Boynton and Cole—													
Daily average...	2,508	2,663	2,616	2,518	2,445	2,912	3,016	2,603	2,608	2,714	2,659	2,570	
Month	77,748	74,564	81,096	75,540	75,795	87,360	93,496	80,693	78,240	84,134	79,770	79,670	968,106
Okmulgee—													
Daily average ...2,801	2,559	2,524	2,522	2,522	2,516	2,392	2,473	2,498	2,461	2,550	2,460		
Month	86,831	71,652	78,244	75,660	78,182	75,480	74,152	76,663	74,940	76,291	76,500	76,260	920,855
Tiger Flats, Henryetta and Schulter—													
Daily average...	2,224	2,155	2,189	1,949	2,384	2,104	2,062	2,073	2,887	2,816	2,783	2,601	
Month	68,944	60,340	67,859	58,470	73,904	63,120	63,922	64,263	86,610	87,296	83,490	80,631	858,849
OKFUSKEE, SEMINOLE AND HUGHES COUNTIES:													
Deaner-Lyons—													
Daily average...	4,665	4,592	4,550	4,511	4,401	4,396	4,380	4,392	4,462	4,452	4,513	4,510	
Month	144,615	128,576	141,050	135,330	136,431	131,880	135,780	136,152	133,860	138,012	135,390	139,810	1,636,876
Wewoka—													
Daily average...	10,957	10,211	10,878	12,464	14,715	18,761	15,710	14,773	11,260	9,542	8,812	9,200	
Month	339,667	285,908	337,218	373,920	456,165	562,830	487,010	457,963	337,800	295,802	264,360	285,200	4,483,843
Papoose-Gilcrease—													
Daily average...	35,257	36,507	29,260	25,142	22,943	19,258	17,379	15,475	14,735	13,439	14,010	14,191	
Month	1,092,967	1,022,196	907,060	754,260	711,233	577,740	538,749	479,725	442,050	416,330	420,300	439,921	7,802,531
Okemah—													
Daily average...	253	251	244	226	225	206	209	216	184	207	280	260	
Month	7,843	7,028	7,564	6,780	6,975	6,180	6,479	6,696	5,520	6,417	8,400	8,060	83,942
Weleetka—													
Daily average...	1,750	1,395	2,350	2,106	2,160	2,362	2,648	2,621	1,879	1,720	1,961	1,910	
Month	54,250	39,060	72,850	63,180	66,960	70,860	82,088	81,251	56,370	53,320	58,830	59,210	758,229
Wetumka—													
Daily average...	77	75	65	108	122	121	104	94	84	86	76	73	
Month	2,387	2,100	2,015	3,240	3,782	3,630	3,224	2,914	2,520	2,666	2,280	2,263	33,021
Cromwell—													
Daily average...	33,147	37,486	32,610	42,866	40,750	37,055	33,486	30,794	27,478	25,357	22,275	21,067	
Month	1,027,557	1,049,608	1,010,910	1,285,980	1,263,250	1,111,650	1,038,066	954,614	824,340	786,067	668,250	653,077	11,673,369
Yeager—													
Daily average...	.....	.....	450	430	391	634	950	972	1,397	1,705	996	812	
Month	.....	.....	13,950	12,900	12,121	19,020	29,450	30,132	41,910	52,855	29,880	25,172	267,390
CREEK COUNTY:													
Cushing-Shamrock—													
Daily average...	23,367	22,983	21,399	21,584	21,333	21,417	21,411	21,775	22,026	22,049	22,033	22,012	
Month	724,377	643,524	678,869	647,520	661,323	642,510	663,741	675,025	660,780	683,519	660,990	682,372	8,024,550
Glenn Pool, Sapulpa and Kiefer—													
Daily average...	9,415	9,060	9,057	9,006	8,988	8,991	8,894	8,887	8,902	9,003	8,891	8,875	
Month	291,865	253,680	280,767	270,180	278,628	269,730	275,714	275,497	267,060	279,093	266,730	275,125	3,284,069
Bristow, Kellyville and Depew—													
Daily average...	28,153	28,014	26,115	25,935	28,116	28,110	27,465	25,733	26,009	26,017	22,114	22,215	
Month	872,743	784,392	809,565	778,050	871,596	843,300	851,415	797,723	780,270	806,527	663,420	688,665	9,547,666
North Bristow—													
Daily average...	3,257	3,249	3,006	2,990	3,020	2,986	3,225	3,170	2,953	2,960	2,990	2,966	
Month	100,967	90,972	93,186	89,700	93,620	89,580	99,975	98,270	88,590	91,760	89,700	91,946	1,118,266
Eastern Bristow—													
Daily average...	7,890	7,790	7,144	7,007	7,140	7,017	6,833	6,804	6,791	6,706	6,006	6,002	
Month	244,590	218,120	221,464	210,210	221,340	210,510	211,823	210,924	203,730	207,886	180,180	186,062	2,526,839
PAWNEE COUNTY:													
Cleveland—													
Daily average...	3,137	3,168	3,107	3,210	3,316	3,295	3,673	3,726	4,592	4,196	5,572	4,917	
Month	97,247	88,704	96,317	96,300	102,796	98,850	113,863	115,506	137,760	130,076	167,160	152,427	1,397,006
Keystone—													
Daily average...	1,065	1,079	1,096	1,125	1,110	1,116	1,155	1,187	1,314	1,104	1,128	1,083	
Month	33,015	30,212	33,976	33,720	34,410	33,480	35,805	36,797	39,420	34,224	33,840	33,573	412,472
Jennings—													
Daily average...	6,535	5,853	5,290	5,296	5,614	5,560	5,695	5,338	5,364	5,906	5,473	5,380	
Month	202,585	163,884	163,990	158,880	174,034	166,800	176,545	165,478	160,920	183,086	164,190	166,780	2,047,172
Otoe or Watchorn—													
Daily average...	8,255	8,979	9,171	6,411	6,826	4,244	5,440	8,458	7,740	6,113	3,457	3,319	
Month	255,905	251,412	284,301	192,330	211,606	127,320	168,640	262,198	232,200	189,503	103,710	102,889	2,382,014
Masham and Ralston—													
Daily average...	.....	181	125	66	101	400	1,085	627	560	496	380	372	
Month	.....	5,068	3,875	1,980	3,031	12,000	33,635	19,437	16,800	15,190	11,400	11,532	133,948
PAYNE COUNTY:													
Yale, Quay, Ingalls—													
Daily average...	4,717	4,594	4,668	4,504	5,170	4,988	4,542	4,508	4,538	5,496	5,712	5,218	
Month	146,227	128,632	144,708	135,120	160,270	149,640	140,802	139,748	136,140	170,376	171,360	161,758	1,784,781
North Cushing or March—													
Daily average...	1,716	1,256	1,255	1,234	1,151	1,147	1,137	1,616	1,528	1,375	917	911	
Month	53,196	35,168	38,905	37,020	35,681	34,410	35,247	50,096	45,840	42,625	27,510	28,241	463,939
Deep Rock—													
Daily average...	.....	.....	.....	.....	.....	.....	.....	.....	.....	440	1,320	2,309	.....
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	13,640	39,600	71,579	124,819

Cracking Unit Return Header

Heat Exchanger Return Bend



Return Header for Tube Stills

Hi-Steel Return Bends
Standard Equipment for Tube Stills

Asphalt Still Header

Tube Still Header with Ohioloy plugs—Alloy closure with strength of steel and 50% greater expansion; non-corrosive.

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Tank Car Bolsters, Side Frames and Repair Castings.

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PLANTS IN
Springfield
Lima

month) and none of the above named new fields had reached great importance up to the close of 1925. It was the discovery of production in deeper sands in old fields that kept Oklahoma from slipping; big production in some cases, which kept the output of crude up to figures little dreamed of at the opening of the year, aided materially by the output in pools opened in 1924 but which came in for much development in 1925, with large resultant production.

Great Producing District

The greatest increase in production last year over that of the year before came in the Holdenville district, or pools in Okfuskee, Seminole and Hughes Counties, which, combined, in 1924, produced 19,337,688 bbls. This was increased last year to 26,739,201 bbls. Of these pools Cromwell produced last year 11,673,369 bbls., a gain of 1,376,658 bbls over the record of 1924, which was 10,296,711 bbls. The Papoose Pool produced 7,802,531 bbls. last year as against 3,521,925 bbls. the year before, a gain of 4,280,606 bbls. The Wewoka Pool, which produced 3,213,152 bbls. in 1924, increased to 4,483,843 bbls. last year, a gain of 1,270,691 bbls. Notwithstanding the fact that the general Holdenville territory fell off in average daily production from 86,106 bbls. a day in January, 1925, to 52,023 bbls. in December, it would be idle to say that its best days are over. It is a big territory containing many small structures with great possibilities of big production in well known sands as yet uncovered, as well as deeper sands in pools already partly exploited. The discovery of Wilcox sand in the Wewoka Field in January of this year is a sample of what may be expected in that general territory. The Wilcox sand discovery well in Section 32-8-8 started at 4,250 bbls. a day and the first offset in produced at least 15,000 bbls. of oil the first day along with perhaps 9,000 bbls. of salt water. The production dropped the second day to 6,000 bbls. These wells give a line on what may be expected of that large territory covering 3, if not 4 counties.

Tonkawa's Best Year

The great Tonkawa Pool in Noble and Kay Counties, although it has seen its best days, produced more oil last year than in any other in its history, its total having been 22,721,580 bbls. as compared with 22,413,740 bbls. in 1924, a gain last year of 307,840 bbls. The decline of the Tonkawa Field in 1925 started early in the year. It averaged 96,334 bbls. a day in January, and dropped to 91,216 bbls. a day in February, and ended the year with an average of 40,379 bbls. in December. Its decline from its second peak (the Wilcox sand peak) really commenced in the fall of 1924. In September of that year the field averaged 104,367 bbls. dropping in October to an average of 101,419 bbls. a day. Tonkawa reached its first and highest peak production of 112,232 bbls. in May, 1923, all of which oil was coming from sands above the Wilcox. The discovery of oil in the Wilcox sand gave new life to a rapidly declining pool, and shot the production to a peak of 111,950 bbls. from all sands, in the latter days of September, 1924, just a little short of its first peak. There is nothing to look forward to in Tonkawa in the

(Continued on Page 173)

PRODUCTION OF OKLAHOMA BY COUNTIES IN 1925

LINCOLN COUNTY:													
Stroud—													
Daily average...	3,304	4,093	3,360	3,405	4,350	4,543	4,384	4,230	3,996	4,511	3,457	3,360	
Month	102,424	114,604	104,160	102,150	134,850	136,290	135,904	131,130	119,880	139,841	103,710	104,160	1,429,103
Davenport—													
Daily average...	.....	1,250	1,130	2,575	4,083	5,414	7,864	10,887	14,544	15,689	19,160	19,875	
Month	.....	35,000	35,030	77,250	126,573	162,420	243,784	337,497	436,320	486,359	574,800	616,125	3,131,158
Kendrick—													
Daily average...	.....	36	32	32	21	20	1,201	1,315	1,161	1,156	2,282	1,946	
Month	.....	1,008	992	960	651	600	37,231	37,665	34,830	35,836	68,460	60,326	278,259
KAY, GRANT, NOBLE COUNTIES:													
Blackwell—													
Daily average...	2,097	2,420	2,480	2,512	2,060	2,108	1,855	2,414	2,613	2,496	2,563	2,411	
Month	65,007	67,760	76,880	75,360	63,860	63,240	57,505	74,834	78,390	77,376	76,890	74,741	851,843
Deer Creek—													
Daily average...	124	106	104	116	108	108	177	202	144	178	99	114	
Month	3,844	2,968	3,224	3,480	3,348	3,240	5,487	6,262	4,320	5,518	2,970	3,534	48,195
Ponca City—													
Daily average...	941	963	960	966	1,002	990	823	891	913	901	825	833	
Month	29,171	26,964	29,760	28,980	31,062	30,700	25,513	27,621	27,390	27,931	24,750	25,823	334,665
Mervine—													
Daily average...	430	448	437	583	434	442	416	404	402	372	357	339	
Month	13,330	12,544	13,547	17,490	13,445	13,260	12,896	12,524	12,090	11,532	10,110	10,509	153,286
Braman—													
Daily average...	2,217	2,412	2,285	2,585	3,331	4,554	12,172	20,655	17,954	13,393	7,937	6,435	
Month	68,727	67,536	70,835	77,550	103,261	136,620	377,332	640,305	538,620	415,183	238,110	199,485	2,933,564
Hubbard—													
Daily average...	106	526	763	1,517	1,583	1,640	1,610	2,056	2,143	2,295	2,085	2,060	
Month	3,286	14,728	23,653	45,510	49,073	49,200	49,910	63,736	64,290	71,145	62,550	63,860	560,941
Thomas—													
Daily average...	239	190	266	241	1,228	3,593	4,022	3,649	8,821	16,276	16,870	15,560	
Month	7,409	5,320	8,246	7,230	38,068	107,790	124,682	113,119	264,630	504,556	506,100	482,360	2,169,510
Tonkawa—													
Daily average...	96,334	91,216	77,962	70,856	62,448	59,130	54,373	51,613	55,466	46,673	42,319	40,739	
Month	2,986,354	2,554,048	2,416,822	2,125,680	1,935,888	1,773,900	1,685,563	1,600,003	1,663,980	1,446,863	1,269,570	1,262,909	22,721,580
Billings—													
Daily average...	402	481	401	399	428	406	444	427	403	384	359	354	
Month	12,462	13,468	12,431	11,970	13,268	12,180	13,764	13,237	12,090	11,904	10,770	10,974	148,516
Miscellaneous—													
Daily average...	.....	.....	.....	.....	.....	.....	96	98	138	125	270	210	
Month	.....	.....	.....	.....	.....	.....	2,976	3,038	4,140	3,875	8,100	6,516	28,639
GARFIELD COUNTY:													
Garber—													
Daily average...	4,600	4,699	5,307	8,105	9,577	10,014	10,261	14,065	38,601	39,616	60,835	40,010	
Month	142,600	131,572	164,517	243,150	296,887	300,420	317,781	436,015	1,158,030	1,228,096	1,825,050	1,240,310	7,484,428
CARTER COUNTY:													
Healdton—													
Daily average...	15,548	15,199	15,262	15,493	15,493	15,417	15,179	15,548	15,301	14,837	15,286	14,962	
Month	481,988	425,572	473,122	464,790	480,283	462,510	470,549	481,988	459,030	453,747	458,580	463,822	5,575,981
Hewitt—													
Daily average...	16,246	15,843	15,727	15,201	14,505	14,760	14,266	14,171	13,951	13,900	13,413	13,163	
Month	503,626	443,604	487,537	456,030	449,655	442,800	442,246	439,301	418,530	430,900	402,390	408,053	5,324,672
Graham—													
Daily average...	10,895	10,197	10,342	9,716	10,291	9,959	10,279	9,538	9,284	10,100	9,460	9,311	
Month	337,745	285,516	320,602	291,480	319,021	298,770	318,649	295,678	278,520	310,310	283,800	288,641	3,628,732
Fox—													
Daily average...	2,508	2,275	2,256	2,238	2,170	2,497	2,141	2,178	2,148	1,967	2,244	2,144	
Month	77,748	63,700	69,936	67,140	67,270	74,910	66,371	67,518	64,440	60,977	67,320	66,464	813,794
Brock—													
Daily average...	1,454	1,556	1,927	2,231	1,969	2,187	2,103	2,209	1,912	1,837	1,865	1,829	
Month	45,074	43,568	59,737	66,930	61,039	65,610	65,193	68,479	57,360	56,947	55,950	56,699	702,586
Sholem Alechem—													
Daily average...	2,045	1,949	1,881	1,864	1,792	1,523	1,458	1,550	1,580	1,943	1,639	1,640	
Month	63,395	54,572	58,311	55,920	55,552	45,690	45,198	48,050	47,400	60,232	49,170	50,840	634,331
STEPHENS-COTTON COUNTIES:													
Loco-Milroy—													
Daily average...	2,278	2,250	2,268	2,257	2,265	2,251	2,322	2,272	2,308	2,278	2,338	2,290	
Month	70,618	63,000	70,308	67,710	70,184	67,530	71,982	70,432	69,240	70,618	70,140	70,990	832,752
Comanche—													
Daily average...	654	633	711	721	780	767	712	938	1,210	1,208	959	963	
Month	20,274	18,564	22,041	21,630	24,180	23,010	22,072	29,078	36,300	37,448	28,770	29,853	313,220
Duncan—													
Daily average...	6,105	5,864	6,221	6,103	6,762	6,661	6,417	6,184	6,469	6,466	6,460	6,452	
Month	189,255	164,192	192,851	183,090	209,312	199,830	198,927	191,704	194,070	200,446	193,800	200,012	2,317,489
Walters—													
Daily average...	1,025	1,025	967	967	957	956	1,090	887	939	959	974	949	
Month	31,775	28,700	29,977	29,010	29,667	28,680	33,790	27,497	28,170	29,109	29,220	29,419	355,014
Kilgore—													
Daily average...	192	192	152	151	152	151	181	186	177	170	163	166	
Month	5,952	5,376	4,712	4,530	4,712	4,530	5,611	5,766	5,310	5,270	4,890	5,146	61,805
JEFFERSON COUNTY:													
						.....	.....	.....	.....	.....	198	192	
						.....	.....	.....	.....	.....	5,940	5,952	11,892
Hambro—													
Daily average...	433	425	576	787	750	749	1,130	1,195	1,362	2,219	2,001	3,017	
Month	13,423	11,900	17,856	23,610	23,250	22,470	35,030	37,045	40,860	68,789	60,030	93,527	447,790
CADDO COUNTY:													
Cement—													
Daily average...	1,770	1,705	1,570	1,544	1,535	1,526	1,549	1,528	1,605	1,602	1,608	1,602	
Month	54,870	47,740	48,670	46,320	47,585	45,780	48,019	47,368	48,150	49,662	48,240	49,693	582,097
GARVIN COUNTY:													
Robberson—													
Daily average...	3,125	3,149	2,997	3,062	2,865	2,788	2,870	2,786	2,687	2,903	2,980	2,913	
Month	96,813	88,172	92,907	91,890	88,815	83,640	88,970	86,366	80,610	89,993	89,400	90,303	1,067,879
BECKHAM COUNTY:													
Sayre—													
Daily average...	175	175	104	106	132	115	132	112	112	112	106	101	
Month	5,425	4,900	3,224	3,180	4,092	3,450	4,092	3,472	3,360	3,472	3,180	3,131	44,978
PONTOTOC COUNTY:													
Allen													
Daily average...	268	268	268	274	274	269	252	242	242	240	240	236	
Month	8,308	7,504	8,308	8,220	8,494	8,070	7,502	7,502	7,260	7,440	7,200	7,316	93,124
POTTAWATOMIE COUNTY:													
Maud—													
Daily average...	15	17	15	15	15	15	15	50	50	50	40	44	
Month	465	476	465	450	465	450	465	1,550	1,500	1,550	1,200	1,364	10,400
JEFFERSON COUNTY:													
Madill—													
Daily average...	.....	.....	.....	.....	.....	.....	.....	.....	.....	153	115	121	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,743	3,450	3,751	11,944
Daily average...	493,880	496,635	464,636	468,515	465,925	461,099	460,116	465,840	494,168	481,329	486,366	455,608	
Total, 1925	15,462,800	13,905,780	14,403,716	14,055,450	14,443,675	13,832,970	14,263,565	14,441,040	14,825,040	14,921,199	14,590,980	14,123,848	173,270,063
Total, 1924.....	12,292,833	12,236,437	13,336,851	13,452,240	14,247,697	14,447,390	15,191,860	16,525,356	16,290,030	16,189,893	15,955,620	16,031,185	176,206,397
Total, 1923	13,328,574	12,045,020	13,958,828	14,399,610	15,658,782	15,572,730	15,260,184	14,049,076	12,812,220	12,961,782	12,334,620	12,232,259	165,013,685

Good Year for Oklahoma Producers

Conditions Better Than at Any Time Since 1920. Increased in Completed Work Over 1924 and Several New Pools Were Developed. Prospects Favorable

By J. L. Dwyer

The year 1925 was the most prosperous for the oil producers of Oklahoma since the banner year 1920, when the wave of false prosperity left them with swelled bank accounts, or at least paper profits, and then with little warning plunged them into the horrible maelstrom of 1921.

In the latter year, the price of crude dropped from $3.50 to $1 a barrel within 60 days, leaving with each successive lash, fresh victims in the bankruptcy courts. Profits made during 1920 had been reinvested with too little regard for a proper surplus which should be the parachute for business during periods of inflation, and the quickly altered status of the industry at the start of 1921, rapidly reduced the value of these investments, and in many cases erased it completely.

It was the demoralized condition that the producers found themselves in 1921. The banks were bulging with paper which required a long time to liquidate. Credit was ruined in Eastern financial circles, and the investing public was playing decidedly shy of any oil venture. The disaster of 1921 cast many wrecks upon the shoals of oleaginous ruin.

These conditions are mentioned in reviewing the year just closed because they offer such a sharp contrast to the present situation in the petroleum industry, especially the producing branch. It might be said that the industry is emerging from a prolonged depression, for the five years that have lapsed since 1921 have been almost barren of good results for the oil producers of Oklahoma.

The year 1925 is the first since 1920, in which proration failed to appear upon their horizon. Although during the period of Smackover's greatest production the crude market in Oklahoma was decidedly "soft," and no pipe line companies were really anxious for any additional connections, there was no sign of proration, and the daily runs from the leases were handled just as the oil was produced.

There were no huge profits realized by the producers of the State during 1925, but the general tone of the business was vastly improved. The industry is on a much better foundation. There was greater stability in the price of crude oil during 1925 than at any time for the past five years. Operating at the price schedule which was maintained during the year, the companies could at all times realize a margin of profit which permitted their continued activity. The most remarkable achievement upon the part of the oil producers during the year was that they rid themselves of the belief that $4 oil was right around the corner and they prepared to produce oil and operate at the posted price. Too long they had labored under the delusion that a higher schedule of prices would appear shortly, and that relief would be forthcoming within the next few months. Working upon this unstable basis there were dozens of individual and small companies who deluded themselves and planned to drill for oil which they believed would soon be marketed for $4 a barrel.

Deep Drilling Becomes Common

Following the tendency developed during the past 10 years, deeper drilling dominated the field activities of the year, and today the common depth which wildcat wells have as their limit is 4,000 feet and in some cases 5,000 feet, an interesting comparison with the practice of five years ago, when a 3,000-foot hole was considered a great risk.

As the new year dawned for the producers of Oklahoma their outlook is better than at any time since 1920, and it is to be hoped that they have profited by the disastrous experiences of the past, and will base their operations strictly upon current conditions, discounting to a large per cent, speculations as to what the future holds. In other words if the price offered for Oklahoma crude fails to render a reasonable profit for the drilling and producing of oil, the logical course for the producers to pursue is to go fishing.

Each successive year in recent times has witnessed some mammoth field under development. Burbank, Tonkawa, Powell, Mexia, Santa Fe Springs, Huntington Beach, Signal Hill and Salt Creek, have all had their depressing effect upon the Oklahoma producer, but in 1926 he is starting with clear skies and with nothing in the immediate future to hinder his prospects for a prosperous year.

New Pools and Deeper Sands

The outstanding field developments of 1925 were the Garber Field in Garfield County, where deeper drilling uncovered the Wilcox sand and poured approximately 12,000,000 bbls. of oil into the pipe lines before the fatal salt water drowned out much of the crude; the Thomas Pool, 6 miles northwest of the Tonkawa Field in Kay County, the Braman Townsite Pool near the Kansas line in Kay County, the Davenport Field in Lincoln County, the Cromwell Field in Okfuskee and Seminole Counties, and the north extension of the Tonkawa Field. The most commanding of these operations was the Garber Field, for in the late fall, it almost menaced the crude market when it attained its peak production.

There were two features of paramount importance in Oklahoma during the year. First, the very limited amount of "free oil"—that is, oil not produced by purchasing companies and refiners—available to the pipe lines, and second, the introduction to Oklahoma Fields of a pool which gushed oil by hydrostatic rather than by gas pressure.

Variable Production

There was a variation of 57,740 bbls. between the highest daily production of the year in the State and the lowest figure that the fields produced on any one day. For the week ended July 18, Oklahoma produced an average of 441,685 bbls. daily; and for the week ended November 26, with the Garber Field at its peak, the State produced 499,425 bbls. of crude. Although the daily production was pressing the half-million mark in November, there were no price cuts, and while the crude market experienced a slight softening in tone, there was little anxiety caused by the flush of the Garber Field.

This may indicate that unusual confidence was reposed in future strength by the crude oil purchasing companies, or it may indicate that they were hesitant to believe that the danger offered to the crude market by the Garber Field would endure for any length of time. Of the two theories, the former seems to be the more tenable, for at the time of the Garber peak, there was a very limited amount of guessing as to what figure the Garber deep sand production would reach.

The average initial production per well decreased in 1925, and was 177.08 bbls. This is the smallest average since 1921, when the figure per well was 103.11 bbls. 1924 had the best average per well with 251.65 bbls.

In percentage of dry holes drilled, 1925 also failed to establish a good figure, and 32 per cent of the holes drilled were failures; 1924 held the best average in this respect also, for during that year 27.6 per cent of the holes drilled were dry and abandoned.

The average gravity of oil produced in Oklahoma increased almost 1 degree Baume last year, and was 37.5 degrees, an increase from 36.6 degrees, the average for 1924. The gravity of Oklahoma oil has steadily increased with the extended scope of operations, and the first oil found in the State had a gravity of 32.3 degrees.

As the Garber Field in Garfield County was the most spectacular and the most productive field that 1925 witnessed, it will be reviewed first. During the first week in April, the Sinclair Oil & Gas Co.'s No. 25 Belveal, NE cor. NE, Section 24-22-4w, struck a sand at 4,477 feet, and the well started flowing at the rate of 25 bbls. an hour. With deeper drilling, the flow increased to 160 bbls. an hour, and during the first three months of its productive life it flowed 200,000 bbls.

A Record-Breaking Well

To the Sinclair Oil & Gas Co. goes the double glory for discovering the field and for drilling in the well which had the highest initial production ever found in Oklahoma. The No. 19 Hartley, in the northwest quarter of Section 18-22n-3w, in the northeastern part of the pool immediately after completion had a production of 18,800 bbls. in 24 hours. This is the highest figure attained since drilling was started in Oklahoma. This well has produced approximately 537,000 bbls. up to February 1, and is second in production only to the Roxana Petroleum Corp.'s No. 3-W Schroeder in this field, which has flowed almost 1,000,000 bbls. of oil into the tanks. The Sinclair Co. has been splendidly compensated for discovering the deep sand at Garber.

Immediately upon the completion of the Sinclair well, 34 tests were started to the deep sand, and not all of them were destined to be profitable, for the discovery well was on the edge of the pay.

The Garber deep sand was found to be the Wilcox, and several of the companies who held leases close to the Belveal well were richly rewarded for their investment. Probably the most fortunate of the companies in the Garber Field was the Roxana Petroleum Corp., which owned the 160-acre Schroeder lease, the southwest quarter of Section 18-22-3w, and which joined the Belveal lease diagonally on the northeast. This lease has produced over 2,000,000 bbls. of oil from the deep sand.

Deep Sand Defined

With the completion of the original 34 wells, the west, south and southwest limits of the field were discovered, and the richest spot in the pool was immediately northeast of the discovery well. Garber seemed to be limited as far as extension of producing area is concerned, and the structure appears to be defined. The deep sand development has been gradually extended until it covers an area of approximately 500 acres running three-quarters of a mile east and west and 1 mile north and south. Forty-eight wells have been producing from the deep sand with good results to the owners. The Garber Field is in the setting sun of its productivity, and today finds a greater quantity of salt water flowing than oil, but the deep sand on February 1, was making 16,000 bbls. daily from 48 wells. Among the features of the Garber Field is the fact that its oil had the highest temperature that has ever been recorded in Oklahoma, namely 144 degrees and, as mentioned above, a well in this field has established the record for initial production. The high temperature was just as the peak of production was reached. The deep drilling at Garber was expensive, and the average cost of the Wilcox sand wells drilled to the depth of 4,400 feet was $75,000.

Thomas an Interesting Pool

The Thomas Pool, 6 miles northwest of Tonkawa in Kay County, probably created more excitement than any field except Garber. In 1924, the Marland Oil Co. by the application of the core drill, found evidence of a structure, and in the drilling activity which followed, (and which had questionable success) one of the wells was a failure in the Tonkawa sand, tapped at 2,400 feet. Feeling that drilling might be productive of results in the lower horizons, the Marland Oil Co. drilled its No. 2 Thomas deeper and at 4,000 feet the Wilcox sand was found. The discovery well had huge production which was maintained for five months, but the area of production in the Wilcox sand was negligible, and one offset to the discovery well was a failure. Owing to the existence of a fault, the offset to the southeast of the discovery well found the top of the sand 200 feet lower than the Thomas well, a dip of almost 45 degrees. Drilling was the very costly method of ascertaining that the fault ran northeast and southwest through the field, eliminating all territory south, east and northeast of the discovery well. In the Thomas Pool, the cream of the production went to the discoverers of the deep sand, and it is very unlikely when the books have been balanced if any excepting the Marland Oil Co. realized profit out of the Thomas Pool activity.

The Thomas Pool attained a peak production of 19,500 bbls. daily before the decline set in and dwindled the runs down to 13,000 bbls. on February 1.

The Thomas Pool deep sand like the Garber deep sand, was drilled with rotary tools and like the Garber deep sand and the Tonkawa deep sand, there was not the slightest similarity between the structures of the upper horizons and the structures found in the Wilcox. For all that they resembled each other they might have been in different continents. These three deep sand operations have contributed liberally to the science of geology, and their drilling, while very expensive, especially to those on the wrong side of the structures, has revealed to the geological profession, much interesting phenomena. The knowledge gained by the geological departments from these three deep operations will have its influence in effecting many rigid economies in future fields of similar character, and it is not unlikely that a note of caution may creep into deep sand operations as a result of these developments.

The Braman Pool in Kay County was discovered May 23, 1925, and the most unusual feature of this pool is the small lease upon which the first well was drilled. The Herbert Oil Co. approved very strongly of the chances of finding production on the edge of the townsite at Braman and upon their securing a lease upon 10 acres, the first well was started. It found the Stalnaker sand at 2,377 feet and flowed 400 bbls. the first 24 hours. Further penetration into the sand improved this figure to a peak of 4,800 bbls. which the well flowed for almost two weeks. The Herbert Oil Co. was the only concern except the Comar Oil Co. which profited out of the town-

(Continued on Page 180)

Kansas' Notably Good Record in 1925

While Few New Areas Were Opened, the Large Amount of Development Work Resulted in High Average of Initial Production of Completed Wells

By J. L. Dwyer

The past year witnessed the largest average initial production per well in the history of Kansas. There were 2,003 wells completed last year and a total of 207,880 bbls. of new production introduced. This gives an average of 103.7 bbls. per well, including all the dry holes and gas wells, the best average since Kansas entered the ranks of producing States. In 1917 the average initial production per well, based on total completions, was 93.8 bbls. and this has been the previous "high." The 1917 figure was due to the completion of big wells in the Towanda Field in Butler County,

(Continued on Page 164)

PRODUCTION OF KANSAS FOR 1925

		January Bbls.	February Bbls.	March Bbls.	April Bbls.	May Bbls.	June Bbls.	July Bbls.	August Bbls.	September Bbls.	October Bbls.	November Bbls.	December Bbls.	Total 12 Months
Marion County—														
Florence:	Daily average	1,204	1,309	1,180	1,332	1,307	1,247	1,136	1,139	1,075	912	1,004	970	
	Month	37,324	36,653	36,580	39,960	40,517	37,410	35,216	34,999	32,250	28,272	30,120	30,070	419,370
Peabody:	Daily average	2,474	2,450	2,527	2,516	2,630	2,519	2,634	2,469	2,459	2,298	2,192	2,202	
	Month	76,694	68,600	78,337	75,480	81,530	75,570	81,654	76,539	73,770	71,238	65,760	68,262	893,434
Covert-Sellers:	Daily average	977	964	961	966	942	914	886	908	954	982	961	1,049	
	Month	30,287	26,992	29,791	28,989	29,202	27,420	27,466	28,148	28,620	30,442	28,830	32,519	348,706
Butler County—														
Elbing:	Daily average	3,382	3,131	3,442	3,137	3,224	3,201	3,189	2,957	2,934	3,015	3,156	3,044	
	Month	104,842	87,668	106,702	94,110	99,944	96,030	98,859	91,667	88,020	93,465	94,680	94,364	1,150,351
Potwin:	Daily average	496	456	730	773	788	769	1,061	901	730	708	651	576	
	Month	15,376	12,768	22,630	23,190	24,428	23,070	32,891	27,931	21,900	21,948	19,530	17,856	263,618
Cameron-Robinson:	Daily average	652	650	660	687	686	653	733	656	663	635	619	574	
	Month	20,212	18,200	20,460	20,610	21,266	19,590	22,723	20,336	19,890	19,685	18,570	17,794	239,336
Wilson-Dunkle:	Daily average	1,955	1,817	2,092	2,104	2,387	2,290	2,376	2,285	2,499	2,011	1,971	1,869	
	Month	60,665	50,876	64,852	63,120	73,997	68,700	73,656	70,835	74,970	62,341	59,130	57,939	781,021
Towanda:	Daily average	2,393	3,110	3,159	3,170	3,278	2,987	3,172	3,129	3,043	2,983	2,835	2,911	
	Month	71,083	87,080	97,929	95,100	101,618	89,610	98,332	96,999	91,290	92,473	85,050	90,241	1,096,805
El Dorado:	Daily average	6,130	6,026	6,670	6,519	6,592	6,501	6,768	6,853	6,666	6,807	6,673	6,540	
	Month	190,030	168,728	206,770	195,570	204,352	195,030	209,808	212,443	199,980	211,017	200,190	202,740	2,396,658
Fox-Bush:	Daily average	2,641	2,726	2,642	2,523	2,430	2,436	2,268	2,336	2,269	2,160	2,113	1,999	
	Month	81,871	76,328	81,902	75,690	75,330	73,080	70,308	72,416	68,070	66,960	63,390	61,969	867,314
Nuttle-Koogler:	Daily average	1,533	1,466	1,509	1,664	1,726	1,688	1,932	1,825	1,861	1,810	1,846	1,878	
	Month	47,522	41,048	46,779	49,920	53,506	50,640	59,892	56,575	55,830	56,110	55,380	58,218	631,421
Smock:	Daily average	236	250	243	225	219	216	247	268	278	279	226	279	
	Month	7,316	7,000	7,688	6,750	6,789	6,480	7,657	8,308	8,340	8,649	9,780	8,649	93,406
Leon-Weaver:	Daily average	822	843	850	843	801	802	835	792	827	773	762	837	
	Month	25,482	23,744	26,350	25,290	24,831	24,060	25,885	24,552	24,810	23,963	22,860	25,947	297,774
North Augusta:	Daily average	1,204	1,143	1,252	1,210	1,238	1,226	1,235	1,164	1,146	1,101	1,083	1,158	
	Month	37,324	32,004	38,812	36,300	38,378	36,780	38,285	36,084	34,380	34,131	32,490	35,898	430,866
South Augusta:	Daily average	2,122	2,024	2,227	2,121	2,325	2,293	2,168	2,237	2,182	2,119	2,019	2,171	
	Month	65,782	56,673	69,037	63,630	72,075	68,790	67,208	69,347	65,490	65,689	60,570	67,301	791,591
Sluss:	Daily average	460	429	446	452	458	460	733	460	455	434	437	416	
	Month	14,260	12,012	13,826	14,460	14,198	13,800	22,723	14,260	13,650	13,454	13,110	12,896	172,649
Douglass:	Daily average	176	176	174	152	158	156	148	148	141	137	137	132	
	Month	5,456	4,928	5,394	4,560	4,898	4,680	4,588	4,588	4,230	4,247	4,110	4,092	55,771
Blankenship:	Daily average	1,048	1,084	1,066	1,015	1,024	1,011	966	1,064	954	948	1,232	1,439	
	Month	32,488	30,352	33,046	30,450	31,744	30,330	29,946	32,984	28,620	29,388	36,960	44,609	390,917
Greenwood-Woodson Counties—														
Sallyards:	Daily average	1,643	1,748	1,716	2,464	1,891	1,902	2,221	2,065	1,974	1,861	1,843	1,848	
	Month	50,933	48,944	53,196	73,920	58,621	57,060	68,851	64,015	59,220	57,691	55,290	57,288	705,029
Teeter-Pixley:	Daily average	3,156	4,125	5,407	8,702	10,224	10,016	16,458	18,009	18,475	18,712	18,127	18,349	
	Month	97,836	115,500	167,617	261,060	316,944	300,480	510,198	558,279	554,250	580,072	543,810	568,819	4,574,865
Virgil:	Daily average	4,838	4,751	4,774	4,958	4,885	4,902	5,036	5,333	4,941	4,799	4,712	4,622	
	Month	149,978	133,028	147,994	148,740	151,435	147,060	156,116	165,323	148,230	148,769	141,630	143,282	1,781,315
Thrall-Burkett:	Daily average	5,128	5,519	5,679	6,495	6,389	6,276	6,653	6,526	6,185	5,815	5,539	5,415	
	Month	158,968	154,532	176,049	194,850	198,059	188,280	206,243	202,368	185,550	180,265	166,170	167,865	2,179,199
Seely:	Daily average	4,282	4,318	4,864	6,874	8,288	8,179	9,514	10,183	10,178	9,320	9,169	9,182	
	Month	132,742	120,904	150,784	206,220	256,928	245,370	294,934	315,673	305,340	288,920	275,070	284,642	2,877,527
Polhamus:	Daily average	3,540	3,423	3,198	3,598	4,041	4,040	3,598	3,410	3,319	3,111	2,941	2,632	
	Month	109,740	95,844	99,138	107,940	125,271	121,200	111,538	105,710	99,570	96,441	88,230	81,592	1,242,214
Miscellaneous:	Daily average	216	189	238	263	285	286	289	260	315	238	346	514	
	Month	6,696	5,292	7,378	7,590	8,959	8,580	8,959	8,060	9,450	7,378	10,380	15,934	104,656
Cowley County—														
Rainbow Bend:	Daily average	8,025	11,992	11,058	9,665	16,999	14,962	12,895	10,622	9,254	10,409	6,779	7,212	
	Month	248,775	235,776	342,798	289,950	526,969	448,860	399,745	329,282	277,620	322,679	203,370	223,572	3,949,396
Slick-Graham:	Daily average	2,990	3,266	3,176	3,801	5,783	4,712	4,669	3,928	3,977	4,189	4,252	3,446	
	Month	92,690	91,448	98,456	114,030	179,273	141,360	141,639	121,768	119,310	129,859	127,560	106,826	1,464,319
Rock:	Daily average	548	486	485	436	511	507	482	517	482	480	443	421	
	Month	16,988	13,608	15,035	13,080	15,841	15,210	14,942	16,027	14,460	14,880	13,290	13,051	176,412
Clark:	Daily average	111	137	170	140	261	233	232	336	284	322	316	315	
	Month	3,441	3,836	5,270	4,200	8,091	6,990	7,192	10,416	8,520	9,982	9,480	9,765	87,193
Eastman:	Daily average	934	1,201	1,346	1,276	1,307	1,294	1,345	1,292	1,281	1,111	1,076	1,050	
	Month	28,954	33,628	41,726	38,280	40,517	38,820	41,695	40,052	38,430	34,441	32,280	32,550	441,373
Winfield-New Salem:	Daily average	1,086	1,825	2,044	2,422	2,510	2,502	2,537	2,021	1,760	1,947	1,819	1,965	
	Month	33,666	51,100	63,364	72,660	77,810	75,060	78,647	62,651	52,800	60,357	54,570	60,915	743,600
Miscellaneous:	Daily average	392	313	476	452	219	210	709	664	658	557	571	570	
	Month	12,152	8,764	14,756	13,560	6,789	6,300	21,979	20,584	19,740	17,267	17,130	17,670	176,691
Other Counties—														
Rice:	Daily average	89	71	81	76	85	83	117	115	106	116	103	111	
	Month	2,759	1,988	2,511	2,280	2,728	2,490	3,627	3,565	3,180	3,596	3,090	3,441	35,255
Russell:	Daily average	1,061	1,313	1,512	1,799	2,711	2,350	5,877	4,824	5,352	5,648	5,670	5,601	
	Month	32,891	36,764	46,872	53,970	84,041	70,500	182,187	149,544	160,560	175,088	170,100	173,631	1,336,148
Harvey:	Daily average	108	101	122	89	107	101	64	90	62	55	46	56	
	Month	3,348	2,828	3,782	2,670	3,317	3,030	1,984	2,790	1,860	1,705	1,380	1,736	30,430
Chautauqua:	Daily average	2,573	2,556	2,573	2,307	2,301	2,297	2,307	2,301	2,307	2,302	2,303	2,283	
	Month	79,763	71,568	79,763	69,201	71,331	68,910	71,517	71,331	69,210	71,362	69,060	70,773	863,789
Elk:	Daily average	844	841	1,016	1,432	1,437	1,430	1,879	1,814	1,628	1,507	1,509	1,491	
	Month	26,164	23,548	31,496	42,960	44,547	42,900	58,249	56,234	48,840	46,717	45,270	46,221	513,146
Wilson:	Daily average	306	301	306	361	360	361	359	353	362	361	361	357	
	Month	9,486	8,428	9,486	10,830	11,160	10,830	11,129	10,943	10,890	11,191	10,830	11,067	126,270
Montgomery:	Daily average	4,013	4,011	3,466	3,997	3,005	3,002	2,496	2,610	2,995	2,995	2,990	2,862	
	Month	124,402	112,308	107,446	89,910	93,155	90,060	77,346	80,910	89,850	92,845	89,700	88,722	1,136,654
Allen:	Daily average	1,359	1,326	1,309	2,901	2,786	2,566	1,942	877	877	875	667	816	
	Month	42,129	37,128	40,579	87,030	86,366	76,980	60,202	27,187	26,310	27,125	20,010	25,296	556,342
Neosho:	Daily average	765	770	768	757	753	760	757	749	757	760	757	753	
	Month	23,715	21,560	23,808	23,710	23,343	22,800	23,467	23,219	22,710	23,560	22,710	23,343	276,945
Lyon:	Daily average	88	87	77	168	170	170	150	137	157	158	244	218	
	Month	2,728	2,436	2,387	5,040	5,270	5,100	4,650	4,247	4,710	4,898	7,320	6,758	55,544
Miami:	Daily average	590	591	590	483	481	471	500	522	484	484	461	479	
	Month	18,290	16,548	18,290	14,490	14,911	14,130	15,500	16,182	14,520	15,004	13,530	14,849	186,244
Franklin:	Daily average	592	589	593	581	579	573	551	557	565	561	553	555	
	Month	18,383	16,492	18,383	17,430	17,949	17,190	17,081	17,267	16,950	17,391	16,590	17,205	208,311
Sumner:	Daily average	.....	.....	.....	.....	.....	.....	20	20	18	18	18	18	
	Month	.....	.....	.....	.....	.....	.....	620	620	540	558	540	558	3,436
Douglas:	Daily average	44	44	44	44	44	43	44	44	44	44	44	43	
	Month	1,364	1,232	1,364	1,320	1,364	1,290	1,364	1,364	1,320	1,364	1,320	1,333	15,999
Bourbon:	Daily average	43	42	43	39	38	39	35	33	33	33	26	34	
	Month	1,333	1,176	1,333	1,170	1,178	1,170	1,085	1,023	990	1,023	780	1,054	13,315
Linn:	Daily average	435	426	475	371	372	370	260	355	338	335	295	291	
	Month	13,485	12,208	13,486	11,130	11,532	11,100	8,060	11,005	10,140	10,385	8,850	9,021	130,401
Anderson:	Daily average	1,661	1,614	1,661	1,620	1,607	1,604	2,506	3,591	2,766	2,894	3,369	3,147	
	Month	51,491	45,192	51,491	48,600	49,817	48,120	77,686	80,321	82,980	89,714	101,070	97,557	824,039
Labette:	Daily average	52	50	52	37	37	38	37	36	37	37	37	36	
	Month	1,612	1,400	1,612	1,110	1,147	1,140	1,147	1,116	1,110	1,147	1,110	1,116	14,767
	Daily average	81,313	88,095	91,114	99,037	112,686	107,648	118,926	114,777	113,109	112,166	107,397	106,736	
	Total 1925	2,520,858	2,466,660	2,824,534	2,971,110	3,493,266	3,229,440	3,686,675	3,558,087	3,393,270	3,477,146	3,221,760	3,308,816	38,151,622
	Total 1924	2,223,878	2,113,853	2,306,426	2,265,090	2,486,696	2,473,320	2,671,053	2,717,398	2,638,900	2,768,455	2,597,466	2,637,443	29,671,551
	Total 1923	2,638,875	2,360,288	2,588,531	2,624,430	2,852,217	2,797,830	3,448,566	2,316,320	2,234,730	2,336,346	2,265,840	2,345,150	29,812,123

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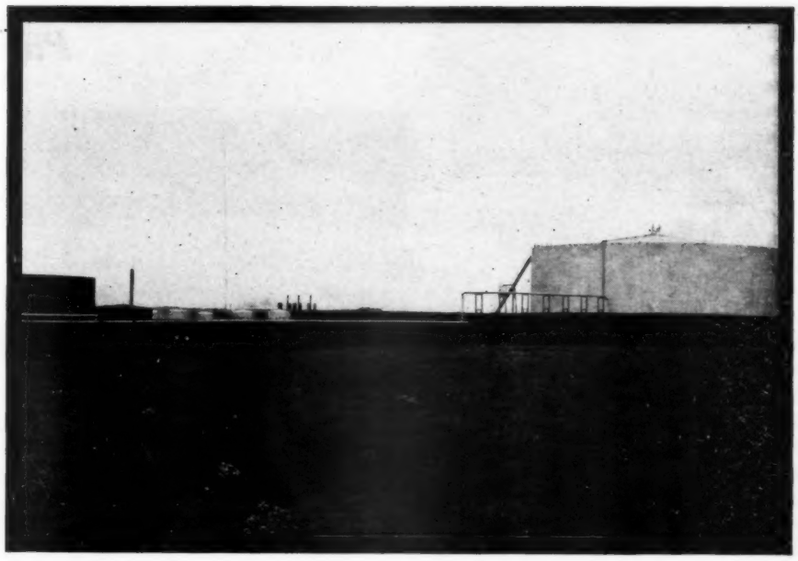

Many instances have come to our attention where refiners and pipe line owners, actually "tired of talk," have tried Liquid Safety Valves merely to convince themselves that we have overstated facts concerning their efficiency.

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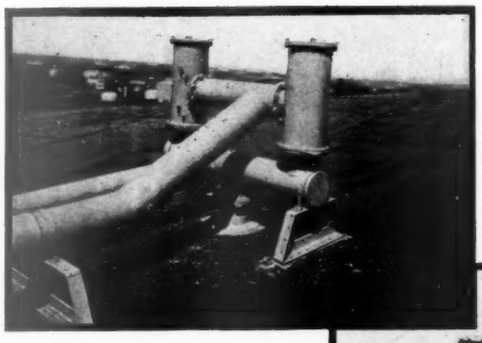

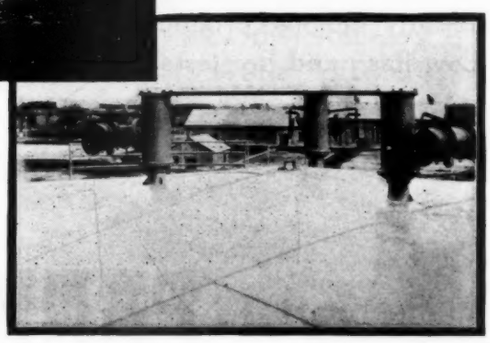

Two types of installations--- with and without vent lines

The top photo shows Liquid Safety Valves installed for use in connection with recovery systems. Simple, economical and foolproof, yet offering the highest degree of efficiency. The bottom photo shows the Safety Valves without vent line. Note the hook-up. Both methods are installed under standard insurance specifications.

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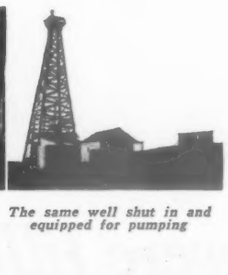
One of our flowing wells



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Deep Sand Discoveries Were Features

Graves and Blossom Sands in Smackover, Arkansas, Were Sensational, While Discovery of Oil in the Trinity Sand in Caddo, Louisiana, Promises Much

By M. L. Vaughn

The Shreveport-El Dorado oil field has just closed one of the biggest and best years in its history and is looking forward to another year of important developments. During 1925, Smackover established a record as the world's most prolific oil pool. Enormous gas territories were developed in both States, new sands discovered, which promise a field for development for years to come, and new pools opened, which there is every reason to believe will result in a more active and extensive drilling campaign than has ever before been known in this territory.

New producing sands have brought into the limelight all the old Louisiana districts, including Caddo, DeSoto and Red River, Sabine, Cotton Valley, Hosston, Haynesville, Homer and Bellevue, in all of which tests to the new deep sand are now in progress. Important extensions promise much development in the El Dorado and Smackover fields as well as in the Stephens district, in Ouachita County, Arkansas, and the Caddo Field in Louisiana, extended into Marion County, Texas, on the west, and 3 miles east in the Pine Island district by the Richardson Oil Co.'s well in Section 13-20-15; and most important of all, two new and distinct pools, the Urania in Louisiana and the Bradley in Arkansas, around which much important development is expected within the next few months.

Great Smackover Field

The greatest field development in the United States in 1925 was that in Smackover, Union and Ouachita Counties, Arkansas, following the discovery of oil in a sand just below the Nacatoch sand, which had been the big producing sand in that pool, already counted as among America's largest pools both in acreage and in production. Its total production for the year was 63,884,174 bbls. In February the production, which had been steadily declining, reached a daily average of 70,125 bbls. In May it had increased to an average for the month of 338,789 bbls. Then it began a decline which reached 163,644 bbls., as the average for December.

Previous to January 28, all production in the heavy oil territory in the Smackover Field had been obtained from the Nacatoch sand, from between 2,000 and 2,100 feet, and the first discovery of oil at a lower level was made by the Lion Oil & Refining Co. of El Dorado, when its No. 5 Graves in Section 3-16-15, 3 miles north of Norphlet and on the southern edge of the Smackover district, blew in with an initial production estimated at 6,000 bbls. of fluid, 90 per cent salt water, and 8,000,000 feet of gas, at 2,501 feet. This well went to salt water, which was cased off and it was brought back in July as a gasser, but never made a successful oil producer.

The Graves sand underlies the Nacatoch, but covers less area, the Nacatoch covering approximately 25 sections and the Graves development only 10 sections. Peak production of the Graves sand was reached in May, when, on the 26th of that month, it was estimated at 393,000 bbls. At the close of the year, there were 711 wells producing from the Graves sand, which an approximate daily production of 111,000 bbls. Average thickness of this said is 12 feet and the oil tests 21 gravity.

On June 5, 1925, a third sand was discovered in the Smackover heavy oil territory, the Texas & Pacific Coal & Oil Co.'s No. 5 Laney in Section 31-15-15, coming in at 2,583 feet, flowing 800 bbls. of 21 gravity oil. This, the discovery well of the Blossom sand, was 4 miles northwest of the Graves discovery well, and in the north end of the heavy oil district. The Blossom sand averages 10 feet in thickness and an unusual characteristic of this production is that it tests all the way from 21 to 31.5 gravity. Considerable difficulty was experienced with salt water in the development of this sand and at the close of the year there were only 186 producing wells in the Blossom sand, with an average daily production of approximately 118,000 bbls. It developed a number of very large gas wells.

El Dorado's Big Year

The city of El Dorado, the headquarters town for oil men and oil companies operating in the south Arkansas fields, was in the midst of the busiest and most prolific development of any oil center in the country. In the general El Dorado Field, which includes the El Dorado Pool, Smackover heavy and Smackover light or Louann pools, or, in other words, all the pools in Union and Ouachita Counties, there were 1,477 wells completed last year, of which 1,175 were oil wells; 197 were barren of oil, and 105 were classified as gas wells. The combined estimated initial production of the 1,175 oil wells was 1,286,077 bbls. These ranged all the way from the very small initial production of some wells in the old El Dorado Pool to 20,000 bbls. in the Smackover Pool.

The following table shows the upward and downward trend of field operations and results thereof by months during the year in the Union and Ouachita Counties:

Field Operations in El Dorado District 1925
(El Dorado, Smackover and Louann Pools)

Month—	Comp.	Initial Prod.	Dry	Gas
January	76	5,827	13	1
February	63	7,614	4	3
March	64	10,549	8	2
April	148	260,155	14	5
May	200	319,569	19	1
June	225	379,440	15	4
July	201	169,584	14	17
August	135	72,099	20	14
September	139	31,673	32	23
October	95	18,522	16	13
November	85	6,930	18	15
December	66	4,115	17	8
Total 1925	1,477	1,286,077	197	105
Total 1924	1,254	203,988	112	48
Difference	223	1,082,089	85	57

Opening the Urania Field

The next important development of the year was the discovery of oil in a 1,500-1,600-foot horizon in the Urania district in LaSalle Parish, Louisiana. Vast sums of money had been spent in wildcatting in Winn and LaSalle Parishes and ever since the early days of development in North Louisiana, tests in this territory at frequent intervals gave promising showings of gas and in a few instances slight indications of oil. From one of these wells, sufficient gas was obtained to supply a lighting system for the salt water natatorium at Winnfield. From another hot sulphur water, almost black in color, was produced with considerable gas bubbling out of it and for at least 1½ miles along the shore of Sugar Creek there was a continuous bubbling of gas up through the mud and slime where if a hole was punched and a light applied, a geyser of flame was produced which would last several minutes.

The first producing well in the Urania district was drilled by the Urania Petroleum Co., an English syndicate, composed largely of members of the textile industry, on land owned by the Urania Lumber Co. in LaSalle Parish. This well came in on March 23, 1925, and after bailing out the water it flowed for one hour between 600 and 700 bbls. a day. It was then closed in owing to a dispute over titles and when opened up several weeks later had gone to salt water and never made a commercial well. The well was completed at 1,511 feet in Section 18-10-2e, in 5 feet of sand, the oil testing 21 gravity.

The first really successful well in the Urania district was drilled by the same company and was known as No. 7 Urania, located in Section 19-10-2e, completed at 1,574 feet in 4 feet of sand and made a 25-bbl. pumper of 21 gravity oil. This well was brought in August 4.

Producing wells in the Urania Field at the close of the year number 15, making an average production of oil per well of 32 bbls. Most of the oil from this district is purchased by the Dixie Oil Co. and shipped to the refineries of the Standard Oil Co. of Indiana. The oil brings the posted price of Gulf Coast crude, Grade A, at present $1.50 a barrel, but in some instances a premium of 15 cents is being paid for Urania crude. Approximately 20,000 bbls. of oil was in storage in the field, in tanks and pits on December 31.

Lafayette Discovery

The most recent discovery of oil in Arkansas, at sufficient distance from present production to warrant the belief that a new pool has been struck, is in Lafayette County, Arkansas. After several years of wildcatting in this county, the first producing oil well was completed on December 6, 1925, by the Arkansas Fuel Oil Co., on the Allen lease in Section 18-19-24. The well was drilled to a depth of 2,786 feet, the sand 1 foot in thickness, and made a 20-bbl. pumper of 26 gravity oil, with 250 bbls. of salt water. It is too early to form an opinion as to whether or not this well is the beginning of an oil field in Lafayette County, but it has been of sufficient interest to attract considerable capital and

PRODUCTION IN ARKANSAS FIELDS IN 1925

		January Bbls.	February Bbls.	March Bbls.	April Bbls.	May Bbls.	June Bbls.	July Bbls.	August Bbls.	September Bbls.	October Bbls.	November Bbls.	December Bbls.	Total 12 Months
Smackover heavy:	Daily average	59,047	58,236	70,125	208,411	338,789	265,275	212,753	202,111	178,166	171,754	164,437	163,644	.....
	Month	1,830,457	1,630,608	2,173,875	6,252,325	10,502,461	7,958,250	6,595,344	6,265,441	5,344,980	5,324,374	4,933,095	5,072,964	63,884,174
Smackover light:	Daily average	32,735	32,757	33,072	30,776	29,930	29,057	27,974	26,110	25,117	23,394	21,881	20,340	
	Month	1,014,785	917,196	994,232	923,280	927,940	871,702	867,190	809,410	753,510	725,214	656,446	630,540	10,091,439
El Dorado:	Daily average	9,651	8,553	9,233	9,321	9,111	8,979	8,732	8,825	8,807	8,480	8,196	7,962	
	Month	299,181	239,484	286,223	279,640	282,445	269,385	270,705	273,575	264,210	262,880	245,885	246,822	3,220,436
Nevada:	Daily average	1,420	1,520	1,516	1,559	1,372	1,5[illegible]	1,532	1,525	1,382	1,370	1,374	1,402	
	Month	44,020	42,560	46,996	46,760	42,535	47,650	47,490	47,275	41,460	42,470	41,205	43,462	533,883
Stephens:	Daily average	2,060	2,016	2,037	1,941	1,891	1,779	1,777	1,770	1,793	1,753	1,711	1,745	
	Month	3,860	56,448	63,147	58,225	58,615	53,385	55,990	54,879	53,790	54,343	51,330	54,095	677,207
	Daily average	108,410	103,082	114,983	252,008	381,097	306,679	252,768	240,341	215,265	206,751	197,599	195,093	214,814
	Total 1925	3,252,303	2,886,296	3,564,473	7,560,230	11,813,996	9,200,372	7,835,819	7,450,580	6,467,950	6,409,281	5,927,955	6,047,883	78,407,138
	Total 1924	3,686,680	3,302,750	3,882,695	4,068,225	4,659,117	4,756,443	4,597,969	4,359,241	4,029,535	3,983,696	3,461,050	3,380,511	48,167,912
	Total 1923	3,222,605	2,740,024	2,978,802	2,873,830	3,219,219	3,463,227	3,713,738	3,292,580	3,165,900	3,120,274	2,973,000	4,017,850	38,766,149

PRODUCTION IN NORTH LOUISIANA FIELDS IN 1925

		January Bbls.	February Bbls.	March Bbls.	April Bbls.	May Bbls.	June Bbls.	July Bbls.	August Bbls.	September Bbls.	October Bbls.	November Bbls.	December Bbls.	Total 12 Months
Bellevue:	Daily average	4,127	3,879	4,057	3,836	3,541	3,428	3,212	3,078	2,872	2,775	2,658	2,475	
	Month	128,340	108,612	125,751	115,082	109,780	102,835	99,575	95,418	86,160	86,025	79,745	76,725	1,214,048
Caddo:	Daily average	11,447	11,819	11,519	11,693	11,990	11,270	11,409	11,630	10,614	11,519	11,191	11,287	
	Month	354,857	330,993	357,083	350,780	371,705	338,104	353,651	360,530	318,420	357,089	335,730	349,897	4,178,839
Haynesville:	Daily average	15,224	14,006	14,547	13,855	13,864	13,004	12,938	12,790	12,471	12,212	11,988	11,463	
	Month	471,944	392,168	450,971	415,655	429,775	390,120	401,070	396,490	374,130	378,572	359,635	355,353	4,815,883
Homer:	Daily average	6,626	6,781	6,816	7,144	6,760	6,818	6,718	6,490	6,280	6,223	6,114	6,045	
	Month	205,406	189,868	211,284	214,325	209,570	204,545	208,260	201,190	188,400	192,882	183,410	187,395	2,396,535
Cotton Valley:	Daily average	6,889	6,988	8,613	9,500	11,130	11,400	11,098	10,977	10,919	10,551	9,163	8,561	
	Month	213,559	195,664	267,009	284,992	345,040	342,015	344,025	340,287	327,570	327,081	274,815	265,391	3,527,508
De Soto, Red River:	Daily average	4,119	3,921	4,272	4,235	3,577	4,112	4,128	4,070	4,104	4,154	3,989	3,855	
	Month	127,689	109,788	132,424	127,058	110,895	123,370	127,965	126,170	123,120	128,774	119,665	119,505	1,476,422
Elm Grove:	Daily average	569	679	697	671	759	645	589	571	532	566	627	657	
	Month	17,639	19,012	21,609	20,145	23,541	19,336	18,261	17,701	15,960	17,546	18,802	20,367	229,919
Urania:	Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	310	
	Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,610	9,610
	Daily average	49,014	48,075	50,520	50,924	51,623	50,677	50,092	49,606	47,792	47,999	45,730	44,653	48,901
	Total 1925	1,519,434	1,346,105	1,566,131	1,528,037	1,600,306	1,520,325	1,552,807	1,537,786	1,433,760	1,487,969	1,371,862	1,384,243	17,848,765
	Total 1924	1,398,370	1,314,242	1,498,574	1,311,142	1,401,835	1,617,610	1,601,365	1,588,872	1,568,772	1,500,052	1,703,481	1,595,278	18,099,596
	Total 1923	2,272,641	1,911,560	2,024,319	2,136,590	2,125,293	1,986,283	1,668,932	1,738,790	1,580,760	1,624,431	1,616,190	1,422,910	22,232,694

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has started an intensive drilling campaign in this territory.

The Keisker Well

Another new territory has been recently opened up in Union County, Arkansas, which can be regarded either as an extension of the El Dorado Field or of the Louann district west of Smackover, or possibly as an entirely distinct pool. The discovery well is known as the "Keisker" well, and was drilled by A. M. Keisker and associates on the Dumas land in Section 9-17-16, 7 miles northwest of El Dorado. It came in on December 31 at 2,070 feet, flowing by heads at the rate of 35 bbls. a day, the oil testing 32.6 gravity. The thickness of the sand is 10 feet.

Extending Stephens Field

An extension of the Stephens Field, in Ouachita County, Arkansas, brings to memory the completion of the discovery well of Arkansas, known as the "Hunter" well, drilled by S. S. Hunter on the Lester & Holton lease, 3 miles east of Stephens. The well and the block of acreage on which it was drilled was sold to the Standard Oil Co., which, after several unsuccessful tests, abandoned the territory and moved to more promising localities. Several years later the territory west of Stephens, now known as the Stephens Field, was opened up and developed and it was not until December 22, 1925, that the Buffalo Oil Co. succeeded in getting a well on the east side of the town of Stephens, and within 2 miles of the old Hunter tract. This was its No. 3 Morgan in Section 22-15-19. which came in at 1,542 feet, making 2,000 bbls. of fluid, 90 per cent salt water, with 5,000,000 feet of gas, in 2 feet of sand. Its initial production was estimated at 300 bbls. and the oil tested 14 gravity. The well was closed in, awaiting marketing and pipe line facilities.

Oil in Marion County, Texas

Marion County, Texas, can hardly be looked upon as a new pool, as it is practically a continuation of the old Caddo Field in Caddo Parish, Louisiana, but development of this district during the past few months has been of considerable interest and promises to become of increased importance during the coming year.

At the close of the year, five producing wells had been put on the beam in Marion County, having an aggregate production of 100 bbls. of 41 gravity oil. As far back as 1913, a well was drilled in this territory which came in with an initial production estimated at 40 bbls., but at that time there were no pipe lines in the vicinity and the price of oil was so low that the well was closed in and forgotten. This well lies 3½ miles southwest of the five Marion County producers and there are now four tests in progress which will explore the entire intermediate territory.

It was the Trimount Petroleum Co. which brought in the first producing well of the past decade in the Marion County Field. It completed its third test on the Mebane-Stiles lease on the Gupton survey in July, 1925, with an initial production of 150 bbls. at 2,329 feet, the oil testing 41 gravity, and coming from a broken sand formation. There are now a dozen or more companies and individuals operating in this district and leases are bringing as high as $100 an acre.

Oil in Trinity Sand

One of the most important developments of the year in the Shreveport-El Dorado district was the discovery of oil in the Trinity sand in Caddo Parish. In November, 1924, the Dixie Oil Co. completed a gas well in this sand in the Pine Island district, this company's No. 43 Robertshaw in Section 13-21-15, making 45,000,000 feet of gas at 3,623 feet. The gas proved very rich in gasoline content, yielding approximately 200 bbls. of high grade gasoline daily and the rock pressure of the well was so great that the gas has been carried ever since to Little Rock, Ark., a distance of 200 miles, without artificial power of any kind.

Attention was attracted to the Trinity sand development by the remarkable success of the Dixie well, and numerous tests were made which for some time resulted, one and all, in failure. In time, the Dixie Oil Co., the Fortuna Oil Co. and the Ohio Oil Co. all succeeded in bringing in good gas wells in the deep sand in the Pine Island district, but it was the Dixie again which finally brought in the first oil well, below the new gas horizon. On December 12, 1925, the Dixie Oil Co. completed No. 53 Robertshaw in Section 13-21-15, at a depth of 3,747 feet, with an initial production of 500 bbls., the oil testing 40 gravity, and 10,000,000 feet of gas. At the end of 24 hours the well had doubled its capacity and was flowing at the rate of 1,000 bbls. a day. The well had about 50 feet of lime formation at the bottom of the hole.

OUTSTANDING DISCOVERIES IN 1925 IN NORTH LOUISIANA AND ARKANSAS

New Pools

Pool, and Parish or County—	Company—	Discovery Well	Location	Thickness of Sand	Top of Sand	Gravity of Oil	Date of Discov'y
Urania, LaSalle, La.	Urania Petroleum Co.	No. 6 Urania	18-10-2e	5 to 7 ft.	1,511	21°	Mar. 23
Bradley, Lafayette County, Ark.	Arkansas Fuel Oil Co	No. 1 Allen	18-19-24	Unknown	2,786	26°	Dec. 6
New Sands							
Graves sand (Smackover), Union County, Ark.	Lion Oil Refining Co.	No. 6 Graves	3-16-15	12 ft.(av.)	2,501	21°	Jan. 28
Blossom sand (Smackover), Ouachita County, Ark.	Texas Pacific C. & O. Co.	No. 5 Laney	31-15-15	10 ft.	2,593	21°-31.5°	Jun. 5
Trinity sand (Caddo), Caddo County, La.	Dixie Oil Co.	No. 43 Robershaw	13-21-15	Lme-sndy.	3,623	40°	Nov. 6
Pools Extended							
El Dorado, Union County, Ark.	Keisker et al	No. 1 Dumas	9-17-16	10 ft.	2,070	32.6°	Dec. 31
Stephens, Stephens County, Ark.	Buffalo Oil Co.	No. 3 Morgan	22-15-19	2 ft.	1,542	14°	Dec. 22
Marion, Marion County, Texas	Trimont Petroleum Co.	No. 3 Mebane-Stiles	Gupton Survey	Broken	2,329	41°	July

Louisiana

General summary of completed wells in 1925.

District—	Oil	Dry	Gas	Total	Initial Prod.
Bellevue	12	8	2	22	174
Caddo	60	11	10	81	4,086
Cotton Valley	117	7	9	133	16,972
Wildcats by parish:					
Blenville	0	3	0	3	0
Bossier	3	13	9	25	15
Caddo	1	12	5	18	12
Caldwell	0	1	0	1	0
Claiborne	0	10	0	10	0
DeSoto	1	5	0	6	7
Grant	0	4	0	4	0
Jackson	0	1	0	1	0
LaSalle	7	19	0	26	262
Lincoln	0	4	0	4	0
Morehouse	0	1	7	8	0
Natchitoches	0	1	0	1	0
Ouachita	0	1	21	22	0
Red River	0	4	0	4	0
Sabine	1	4	0	5	1
Union	0	8	6	14	0
Webster	0	6	16	22	0
Winn	0	2	0	2	0
Total 1925	202	125	85	412	21,594
Total 1924	146	113	164	423	66,917
Difference	56	12	79	11	45,323

Initial gas production in cubic feet:

Bossier	252,000,000
Caddo	41,500,000
Morehouse	72,000,000
Ouachita	262,104,000
Union	59,000,000
Webster	526,000,000

Arkansas

General summary of completed wells in 1925:

County—	Oil	Dry	Gas	Total	Initial Prod.
Union	617	108	66	791	816,532
Ouachita	558	89	39	686	469,545
Stephens	8	4	1	13	374
Nevada	18	2	0	20	1,657
Bradley	0	3	0	3	0
Calhoun	0	2	0	2	0
Clark	0	1	0	1	0
Columbia	0	14	0	14	0
Drew	0	4	0	4	0
Grant	0	1	0	1	0
Hempstead	0	3	0	3	0
Lafayette	1	16	0	17	20
Lincoln	0	1	0	1	0
Miller	0	15	0	15	0
Nevada	0	16	0	16	0
Ouachita	0	9	0	9	0
Union	0	10	0	10	0
Total 1925	1,202	298	106	1,606	1,288,128
Total 1924	1,152	184	49	1,385	206,445
Difference	50	114	57	221	81,683

In 1924, dry holes were also drilled in Leon, Dallas, McClennon, Wood and Williamson Counties. Seventy-eight dry holes were drilled in Limestone-Freestone Counties in 1925 and 11 failures in 1924 and the 73 dusters in Navarro County last year and 80 in 1924. This total of 366 dry holes out of a total of 1,127 wells drilled in two years represents 32 per cent of failures, which shows the unusual hazard under which East Central Texas operators worked in their exploration operations. In the past four years out of a total of 2,762 wells drilled in the territory 899 were failures, or 32 per cent of the whole. No one will ever know the total of the enormous sum of money spent in leases and drilling in that vast territory stretching from the Red River down to and including Williamson County, a stretch of territory nearly 300 miles from northeast to southwest and nearly 100 miles in width, a territory as large as the State of West Virginia. Mexia and each successive pool brought in, started a fresh rush into fields northeast and southwest of the new developments, but in only three counties was oil found and these were closely grouped and the pools, confined to small faulted structures. The productive acreage of the whole East Central Texas area could be crowded into 10½ square miles yet this little territory has produced up to the close of 1925 the enormous total of 180,387,800 bbls., or about 23,592 bbls. to the acre, and the oil is of high gravity.

All Over Early in Year

A review of the East Central Texas territory for 1925 can be little more than a review of the operations early in the year, for it was then that results were forthcoming that paid operators in that territory and when the big wildcat play on acreage was made. The last half of the year was quiet.

The big feature in the territory last year was the Wortham Field in Limestone and Freestone County, opened in November 1924 with a well on the Boyd farm in Limestone County. The field reached its climax in January when it produced 3,513,416 bbls., after the most remarkable development in point of time elapsed in the history of oil. In January, 110 oil wells were completed in the Wortham Field with a combined initial production of 279,542 bbls., or an average of 2,541 bbls. to the well. The peak of production came on January 14, when it reached 168,432 bbls. from 68 wells, but by the close of the month had fallen to 76,000 bbls. from 140 wells. It was seen by the middle of January that the limits of Wortham had become pretty definitely fixed and many derricks were dismantled while wells near dry holes were abandoned at various depths because it seemed hopeless to drill them to sand depth. Wortham was a great disappointment in that it was expected to eventually produce 60,000,000 bbls. of crude and its first year production of 16,024,035 bbls.

(Continued on Page 150)

EAST CENTRAL TEXAS PRODUCED 42,519,917 BARRELS IN 1925

By George R. Kelley

East Central Texas, which started the year 1925 with the Wortham Field rapidly on the ascendancy and with 357 derricks up and wells drilling in the territory and over 150 wells actively drilling in the Wortham Field, in Limestone and Freestone Counties, alone, ended the year with a few scattered operations and with little hope for the future—a completely settled field with its production falling off a little each week in all of the producing fields, Mexia, Powell, Richland, Currie and Wortham and Corsicana.

In January, 1925, 110 oil wells were completed, mostly in Wortham and the total initial production was 279,542 bbls., while in December 4 oil wells were completed with a total initial production of 290 bbls. After March the field dropped to insignificance and in November only 112 bbls. of initial production from 3 oil wells completed showed to what depths the once great producing and operating division had fallen.

42,519,917 Barrels

In the matter of production the whole area comprising six pools, in Limestone, Freestone and Navarro Counties, produced during the year a total of 42,519,917 bbls., divided as follows: Powell. 17,218,874 bbls.; Wortham, 16,024,035 bbls.; Mexia, 6,730,323 bbls.; Richland, 1,794,997 bbls.; Currie, 482,538 bbls. and the old Corsicana Field 269,150 bbls. Compared with the record of the year before the East Central Texas Field completed 239 fewer wells; showed an increase of 93,180 bbls. in total initial production; drilled 50 more dry holes and completed 14 more gas wells. The average initial production of the wells producing oil in 1925 was 809 bbls., while in 1925 the average initial production of the new oil wells was 982 bbls.; in 1923, 2,550 bbls., and in 1922, 1,370 bbls.

Many Wildcat Failures

In the course of the year, 198 dry holes were abandoned. In Falls, Bowie, Delta, Franklin, Henderson, Hopkins, Hunt, Kaufman, Milam, Raines, Red River, Robertson, Anderson, Cass, Hill, Titus and Van Zandt Counties, a total of 57 dry holes were abandoned with no oil or gas wells, showing in any of them.

PRODUCTION IN EAST CENTRAL TEXAS IN 1925

		January Barrels	February Barrels	March Barrels	April Barrels	May Barrels	June Barrels	July Barrels	August Barrels	September Barrels	October Barrels	November Barrels	December Barrels	Total Barrels
Mexia	Daily Av.	20,439	21,933	20,086	19,230	19,836	19,413	18,406	17,821	17,247	17,156	15,139	14,815	.....
	Month	633,609	614,124	622,666	576,900	614,916	582,390	570,586	552,451	517,410	531,836	454,170	459,265	6,730,323
Powell	Daily Av.	59,301	55,870	55,077	51,332	49,676	49,119	46,059	44,746	42,389	38,438	37,849	36,827	.....
	Month	1,838,331	1,564,360	1,707,387	1,539,960	1,539,956	1,473,570	1,427,829	1,387,126	1,271,670	1,191,578	1,135,470	1,141,637	17,218,874
Corsicana	Daily Av.	750	750	750	750	750	750	725	725	725	725	725	725	.....
	Month	23,250	21,000	23,250	22,500	23,250	22,500	22,475	22,475	21,750	22,475	21,750	22,475	269,150
Currie	Daily Av.	1,453	1,567	1,692	1,412	1,409	1,403	1,058	1,225	960	1,435	1,204	1,060	.....
	Month	45,043	43,876	52,452	42,360	43,679	42,090	32,798	37,975	28,800	44,485	36,120	32,860	482,538
Richland	Daily Av.	10,427	8,288	6,396	15,331	4,766	4,424	2,974	3,700	3,272	2,943	2,963	2,737	.....
	Month	323,237	232,064	198,276	159,930	147,746	132,720	123,194	114,700	98,160	91,233	88,800	84,847	1,794,997
Wortham	Daily Av.	113,336	72,964	73,706	58,998	48,188	37,549	29,884	24,926	21,023	18,482	15,284	13,911	.....
	Month	3,513,416	2,042,992	2,284,886	1,769,940	1,493,828	1,126,470	926,404	772,706	630,690	572,942	458,520	431,341	16,024,035
Daily average		205,706	161,372	157,707	137,053	124,625	112,685	100,106	93,143	85,616	79,179	73,164	70,075	.....
Total		6,376,886	4,518,416	4,888,917	4,111,590	3,863,375	3,379,140	3,103,286	2,887,433	2,568,480	2,454,549	2,194,920	2,172,325	42,519,917
Total, 1924		4,177,591	4,241,507	5,073,367	4,629,510	4,283,559	3,918,390	4,034,193	3,971,984	3,687,090	3,898,173	3,440,450	3,917,393	49,473,507
Total, 1923		2,010,702	1,780,465	1,996,015	1,833,301	1,928,871	2,209,222	2,854,199	5,431,382	6,733,020	9,090,616	9,646,587	4,262,306	50,786,282
Total, 1922		4,621,674	4,211,379	4,883,920	3,562,149	2,856,937	1,724,305	2,413,350	2,325,558	2,281,020	2,247,620	1,970,100	2,249,205	35,347,217

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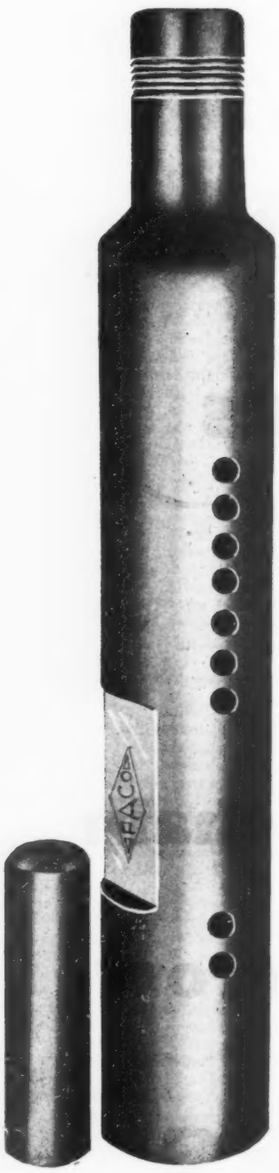

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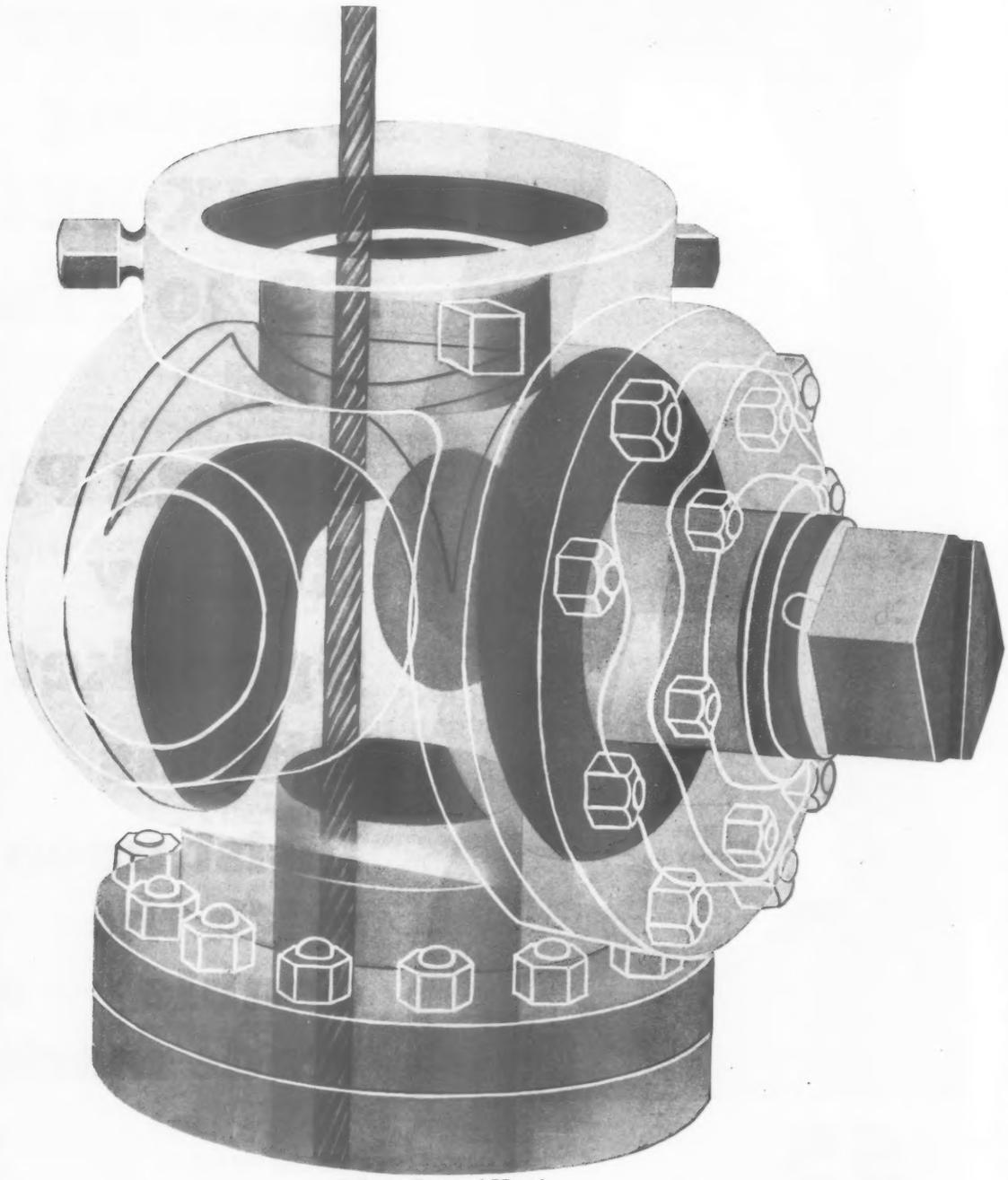

Arbon Control Head

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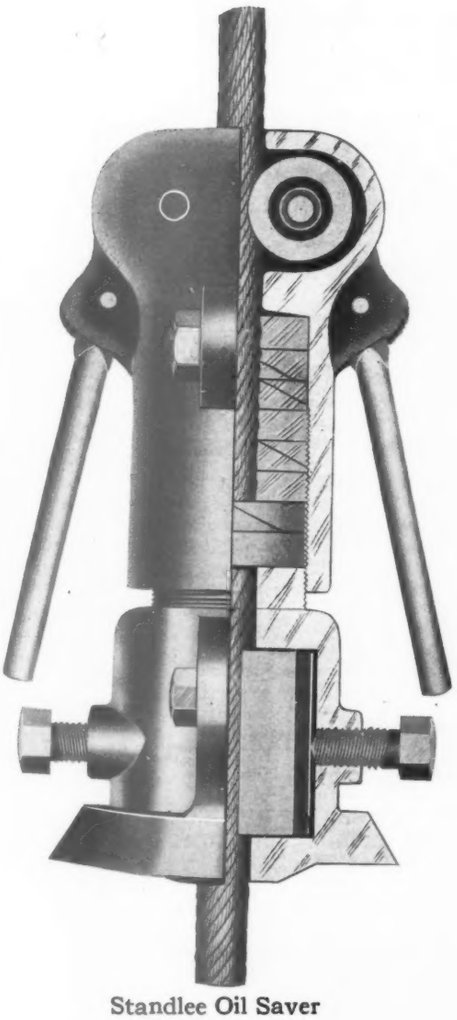
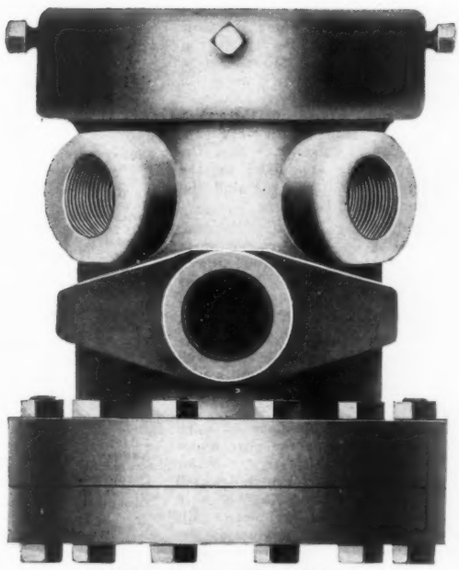
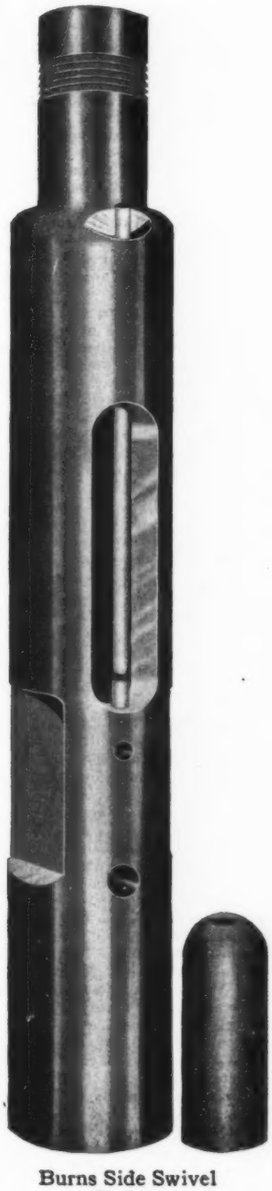


Standlee Oil Saver



Arbon Steam Snuffer



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Production Increase in Gulf Coast

Southwest Texas Fields Also Show Increase in Crude Oil Output in 1925. Field Work Off in Gulf Coast but Shows Increase in the Southwest Area

By P. L. McGreal

Although new production in the Gulf Coast division decreased 68,897 bbls. during 1925 as compared with 1924, the gross production for the year increased 4,685,485 bbls. over that of 1924. It has been a year of records, beginning with the opening of the South Liberty Pool on the first day of 1925 and terminating with the opening of the Boling Dome in Wharton County and the finding of a deep producing sand on the southeast side of the Piedras Pintas shallow pool, down in Brazoria County on the Fort Bend County line, 7 miles east of Damon Mound.

Between the beginning and end of 1925 is interspersed a series of records. The two deepest holes in the history of the Coastal region were abandoned in the Lockport district, near Lake Charles, Calcasieu Parish. No. 1 Miller went to 6,077 feet and No. 3 Miller to 6,005 feet. They were drilled by the Vacuum-Gulf Companies jointly. A vigorous search for deep sands was made during 1925, the campaign covering practically all the defined pools. Millions of acres were explored by geophysical means, such as the seismograph and the torsional balance, in an effort to locate new saline uplifts.

The South Liberty Pool was a disappointment in that it was quickly defined, the production being on the northeast, east and southeast sides and confined to a limited area. The gross production of the pool for the year is placed at 4,674,003 bbls. The peak month was May with 671,181 bbls. and in December it had dropped to 316,324 bbls. A total of 176 wells were drilled of which 37 were failures. The close of the year found one rig running, the same as the end of 1924.

Deep sands were found on the northwest side of the old Batson Pool around 3,400 to 3,500 feet; on the southeast side of the Spindletop Pool around 2,580 feet; on the west side of the Pierce Junction Pool, at 3,890 feet; in the center of the Orange Pool at 4,600 to 4,800 feet; in the Vinton Pool around 3,400 feet and on the northwest side of the Humble Pool at 2,900 to 3,000 feet.

The Vacuum Oil Co. failed to find a deep sand on the southwest side of the Saratoga Pool in two tests, but did get a caprock around 3,860 feet. These were west of Pine Island Bayou. The Rycade Petroleum Corp. went to 5,650 feet on State land in Cow Bayou, on the east side of the Orange Pool and the Sinclair Oil & Gas Co. drilled to 5,500 feet on the Turner lease, one-half mile south of production there, without getting anything. Deep tests on the west and southwest side of the Hull Dome, made in an effort to extend the producing area, were failures. Almost at the close of the year Deering & Kasper got a deep sand on the east and north sides of the old Dayton Pool in Liberty County, around 2,500 feet. The well flowed 200 bbls. for a time, 34 gravity oil. The Gulf Production Co. made two wells on the south side of the High Island Dome in Galveston County around 3,200 to 3,300 feet. They are between the dome and the Gulf of Mexico.

Geophysical Work

The use of the seismograph and torsional balance was introduced into the Coastal Plains region three years ago, but geophysical work reached its climax during 1925. Every County in Texas bordering on the Gulf of Mexico and for 100 miles inland has been explored and almost every parish in southwestern Louisiana has been gone over with either one or both instruments. The scientific principles involved in the use of these instruments have been explained several times in The Oil and Gas Journal. Their use is quite general by the major companies operating in the Coastal region.

Seven saline uplifts have been definitely located by date and proven by the drilling of small shallow holes with a gasoline rotary rig. They are as follows: Nash Dome, already mentioned as where the Rycade Petroleum Corp. has a well; Fannette Dome, Jefferson County, where the Gulf Production Co. has drilled five tests to date, the last one going to 4,670 feet; Hawkins Dome, Matagorda County, where the Gulf Production Co. just quit No. 2 Craig at 4,900 feet and is starting No. 3 Craig; the Orchard Dome, northwest of Rosenburg, Fort Bend County, where the Gulf Co. is now drilling; Long Point, between the Big Creek and Damon Mound Pools, around which the Gulf Co. is drilling; in the southern part of Brazoria County, where the Roxana Petroleum Corp. got gyp around 700 feet. South of Stark, Calcasieu Parish, Louisiana, where the operations are being conducted by the Standard Oil Co. of Louisiana and the Gulf Refining Co. of Louisiana.

In addition to the foregoing the Sun Oil Co. is testing out territory northeast of Devers, Liberty County, and around Winnie, Chambers County. The Texas Co. is still drilling out east of Green Bayou, Harris County, but the Rycade Co. has quit.

The Humble Oil & Refining Co. developed one oil well and two gassers southeast of Kingsville, Kleberg County, around 3,000 feet.

An analysis of the summary of work done in the pools during the year under review shows declines in all the major districts. Goose Creek, for instance, fell off 32 wells completed and 7,225 bbls. in new output. Hull had six more wells completed, but the new production decreased 84,330 bbls. The Orange Pool shows 38 fewer completions and a decrease of 106,239 bbls. in new production for the year as compared with 1924. West Columbia was neglected during the year, 26 wells having been drilled or worked over. The initial output was only 560 bbls. against 11,045 bbls. in 1924. New production in the Humble Pool fell off more than 50 per cent. Batson, Vinton and Spindletop are three old pools to show increases in new production. The deep sand wells on the west side at Pierce Junction are reflected in an increase of 10,600 bbls. in new production there. Damon Mound in the northern part of Brazoria County was absolutely passed up last year. The Sinclair Oil & Gas Co. has practically all the production there, but made no attempt to increase it during 1925.

The following table is a summary of the completions, new production and failures during 1925 compared with 1924 in the Coastal area:

GULF COAST
Summary of Completions in 1925

District—	Comp.	Prod.	Dry or S.W.	Gas
Boling	1	2,600	2	..
Batson	62	13,234	14	..
Blue Ridge	9	7,225	3	..
Barber Hill	2	....	2	..
Big Creek	27	6,025	18	..
Dayton	3	215	..	..
Damon Mound	4	15	3	..
Edgerly (La.)	8	850	6	..
Goose Creek	87	9,640	19	..
Humble	30	7,575	6	..
Hull	167	94,115	19	..
High Island	22	3,490	9	..
Jennings (La.)	29	3,460	6	..
Lockport (La.)	20	5,775	14	..
Markham	7	67	5	..
Orange	114	68,751	32	..
Pierce Junction	18	11,225	8	..
Piedras Pintas	1	1,000	..	..
Spindletop	51	3,703	11	..
Saratoga	34	1,607	12	..
Sour Lake	52	2,946	11	..
Sth. Liberty	176	109,670	37	..
Vinton (La.)	63	17,325	21	..
W. Columbia	26	560	13	..
Miscellaneous	141	290	123	9
Total, 1924	964	440,160	348	10
Total, 1925	1,154	371,263	394	9
Difference	190	68,897	46	1

GULF COAST COMPLETIONS BY MONTHS

Boling

	Comp.	Prod.	Dry
December	3	2,600	2

Batson

	Comp.	Prod.	Dry
January	4	10	3
February	5	90	1
March	8	55	2
April	7	105	2
May	3	40	..
June	4	200	..
July	4	45	..
August	4	1,515	..
September	3	55	1
October	6	55	1
November	6	*11,025	..
December	8	39	4
Total, 1925	62	13,234	14
Total, 1924	80	5,804	17

*Well in deep sand on north side flowed wild 11,000 bbls. and sanded.

Blue Ridge

	Comp.	Prod.	Dry
January	..	....	..
February	1	125	..
March	1	1,200	..
April	2	2,400	..
May	1	2,000	..
June	..	....	..
July	1	....	1
August	..	....	..
September	..	....	..
October	..	....	..
November	2	....	2
December	1	1,500	..
Total, 1925	9	7,225	3
Total, 1924	11	5,804	17

Big Creek

	Comp.	Prod.	Dry
January	1	....	1
February	..	....	..
March	..	....	..
April	*4	4	4
May	6	2,250	3
June	4	....	4
July	3	2,000	2
August	3	50	2
September	2	125	1
October	2	400	1
November	1	200	..
December	1	1,000	..
Total, 1925	27	6,025	18

Barber Hill

	Comp.	Prod.	Dry
February	1	....	1
May	1	....	1
Total, 1925	2	....	2
Total, 1924	3	1,000	2

Damon Mound

	Comp.	Prod.	Dry
April	1	15	..
June	1	....	1
August	1	....	1
October	1	....	1
Total, 1925	4	15	3
Total, 1924	16	170	10

Dayton

	Comp.	Prod.	Dry
March	1	10	..
June	1	5	..
December	1	200	..
Total, 1925	3	215	..

Edgerly

	Comp.	Prod.	Dry
February	2	250	1
March	1	....	1
April	2	600	1
May	2	....	2
September	1	....	1
Total, 1925	8	850	6
Total, 1924	17	1,155	3

Goose Creek

	Comp.	Prod.	Dry
January	7	635	1
February	7	460	3
March	16	1,340	5
April	8	865	3
May	6	415	..
June	8	825	2
July	6	485	1
August	3	175	1
September	6	1,925	1
October	6	1,675	2
November	7	365	1
December	8	445	1
Total, 1925	87	9,640	19
Total, 1924	119	16,865	35

Humble

	Comp.	Prod.	Dry
January	2	1,000	..
February	1	....	1
March	2	....	2
April	3	335	1
May	4	4,060	1
June	4	36	1
July	3	96	..
August	2	60	..
September	3	1,315	..
October	2	300	..
November	2	300	..
December	2	75	..
Total, 1925	30	7,575	6
Total, 1924	37	18,350	11

Hull

	Comp.	Prod.	Dry
January	10	930	1
February	19	4,305	3
March	21	23,385	2
April	15	14,060	1
May	20	15,955	3
June	13	3,225	1
July	15	4,775	2
August	13	8,175	3
September	11	7,190	1
October	6	515	..
November	14	6,810	..
December	10	4,450	2
Total, 1925	167	94,115	17
Total, 1924	161	178,455	45

High Island

	Comp.	Prod.	Dry
May	2	1,300	..
June	2	15	..
July	3	....	3
August	1	25	..
October	6	1,175	1
November	6	825	3
December	3	150	2
Total, 1925	22	3,490	9

Jennings

	Comp.	Prod.	Dry
January	3	65	..
February	3	770	..
March	3	270	1
June	5	125	2
August	3	500	2
September	3	165	..
October	2	100	..
November	3	1,300	1
December	4	165	..
Total, 1925	29	3,460	6
Total, 1924	27	2,150	16

Markham

	Comp.	Prod.	Dry
January	1	60	..
March	1	....	1
April	1	....	1
May	2	....	2
July	1	7	..
August	1	....	1
Total, 1925	7	67	5

Lockport

	Comp.	Prod.	Dry
January	..	....	..
February	3	250	2
March	..	....	..
April	..	....	..
May	2	....	2
June	2	800	1
September	5	2,650	3
October	4	2,075	2
November	2	....	2
December	2	....	2
Total, 1925	20	5,775	14

Orange

	Comp.	Prod.	Dry
January	5	3,150	3
February	15	7,425	9
March	9	3,940	1
April	17	4,052	3
May	12	910	4
June	8	1,160	1
July	12	13,175	1
August	8	1,695	1
September	11	8,625	3
October	10	5,299	4
November	10	14,325	3
December	8	8,095	..
Total, 1925	114	68,751	32
Total, 1924	152	174,990	47

Pierce Junction

	Comp.	Prod.	Dry
January	3	4,200	..
February	1	225	..
March	1	250	..
April	1	....	1
May	2	500	..
June	5	50	4
July	..	....	..
September	1	2,500	..
October	2	....	2
December	2	3,500	1
Total, 1925	18	11,225	8
Total, 1924	11	625	8

Piedras Pintas

	Comp.	Prod.	Dry
December (deep sand)	1	1,000	..

Spindletop

	Comp.	Prod.	Dry
January	1	35	..
February	4	350	..
March	8	533	..
April	6	345	1
May	1	30	..
June	2	20	1
July	3	100	1
August	2	15	1
September	4	250	1
October	6	45	3
November	7	1,865	..
December	7	65	3
Total, 1925	51	3,703	11
Total, 1924	36	1,498	9

Saratoga

	Comp.	Prod.	Dry
January	1	20	..
February	2	25	1
March	6	763	1
April	4	67	..
May	4	310	2
June	6	335	2

(Continued on Page 150)

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Sunburst and Artesia Were Features

Discovery of Oil in Utah and Further Developments in Colorado Were Also Features of Rocky Mountain Region in 1925; Wyoming Production Slumps

By F. B. Taylor

With the exception of two fields, Artesia, New Mexico, and Sunburst, Montana, the Rocky Mountain region showed but little advancement in 1925 over 1924. The two fields named are located at the extreme ends of this region and are the result of the branching out of oil men in search of new pools. The rest of the fields were drilled inside the defined limits and the year was devoted, in the main, to consolidation of the proven areas.

The main factors preventing a more extensive campaign of wildcatting during 1925 were the high cost of tools and equipment, the cost of field work in out of the way places, and a comparatively low oil market for crude. The larger oil firms were equipped with the necessary capital to carry on wildcat campaigns, but many of these firms had already extensive holdings in various fields and the attention of the heads appeared to be towards the development of known areas with only a small part of the work done in the search for new fields.

Operating in Artesia and Sunburst is comparatively low in cost, and suited to the small operator with a restricted capital. Sunburst is especially so, in this regard. Wells can be drilled there with the heavier type of machines and the holes put down to the sand with only a few joints of big pipe, until the well is drilled in and found a producer or a dry hole. If the former, a string of casing can then be purchased and placed in the well. The depth is about 1,500 feet to the sand. Artesia has the pay around 2,000 feet and the drilling is fairly good with the horizons known and the casing needed, known beforehand.

As the year closed only one new field appeared to have been found in 1925. This was opened by the so-called Moab well of the Midwest Refining Co. and the Utah Southern Oil Co. in eastern Utah, on the Grand River. Another strike by the Midwest Refining Co. and the Utah Oil & Refining Co. at Cisco, Utah, earlier in the year had not been developed far enough to warrant its classification as a proven field.

The Union Oil Co. of California brought in a new black oil field in the Big Horn Basin at Thermopolis, Wyoming, and the Producers & Refiners Corp. found oil in a wildcat at Crooks Gap, in central Wyoming, which may prove to be a field with further development.

General Resume of 1925

An important feature of 1925 was the moving of the Land Office at Douglas, Wyoming, to Cheyenne on the plea of economy. There is no doubt that this move accomplished a lowering of the cost to the Government in the cost of maintaining offices for the Land Department, but the increased cost necessary for the oil operator and others interested in Government lands in Wyoming, multiply the amount saved by the Government many times.

The administration of the Government lands in this region has come in for much condemnation on account of its policies of late, and the heavy tax caused by the excessive use of red tape and the slowness of action has prevented much development that would otherwise have been accomplished. Many are deterred from developing both mineral and agricultural lands because of the expense incurred in travel and the requirements to be met in obtaining anything like a clear title.

In the past year, the Chicago & Northwestern Railroad made a test of equipping its engines with oil burners instead of coal. The company then changed back to coal, although it was stated that oil was found better for the railroad's use in many ways than coal, but because of the fact that the railroad owned its coal mines, coal was the cheaper of the two fuels.

The Ohio Oil Co. drilled a well in the Bates Hole country of Wyoming with a gasoline engine taken from a White truck. The experiment was successful. It cut the cost of water for operating drilling wells to a minimum in an arid region where water is scarce. The Ohio Oil Co. also secured a charter for supplying the city of Cody, Wyoming, with natural gas, but owing to water encroachment in the gas well in Oregon Basin, the charter was given up.

Lavoye, a small city in the center of the Salt Creek Field, was compelled to move to another location in the field because it impeded the development of that portion of the field.

After trying the rotary drill in Salt Creek and making faster records than were ever accomplished with cable tools, the rotary was abandoned because of its inability to make a straight hole.

A merger including the Marine, Glenrock, Hall, Royalty & Producers, Western States and other oil companies was accomplished by Max W. Ball and these companies have ceased to be and are now included under the Argo Oil Co.

When the Producers & Refiners built its large refinery at Parco, Wyoming, a small city was also laid out and built to provide homes for the people. This town of Parco was owned in its entirety by the Producers & Refiners Corp., but in the summer of 1925 the firm decided to sell and accordingly disposed of all the city of Parco in the middle of the summer of 1925.

The Midwest Refining Co. won a suit at law for the reduction of taxes on stored oil in Natrona County, Wyoming. By this suit, the Midwest gained a victory for all the oil producers in that storage oil that has already paid a production tax cannot be legally taxed again.

The asphalt manufacturers won a suit at law against the State of Colorado by which the use of asphalt on the highways of that State shall compete with concrete.

Taxes placed on the sale of gasoline became general in the Rocky Mountain States during 1925. Wyoming placed a State tax on all gasoline sales of 3 cents per gallon in spite of strenuous opposition by the oil men.

The Midwest Refining Co. inaugurated a new method of determining the geology in subsurface strata by drilling a number of shallow holes in the Dutton Creek structure in southern Wyoming. It is believed that many productive structures exist in the Rocky Mountain region which are hidden beneath overlays of later deposits. By this method, the subsurface geology can be readily determined and the hidden structure mapped accurately.

Refinery Construction

There was only a small amount of new refinery plant construction during 1925 in the Rocky Mountain region. The Arro Oil Co. built a small plant at Coutts, Canada, that is to take oil from the Sunburst Field there. It is a skimming plant with a 2,000-bbl. capacity.

The Ohio Oil Co. was to build a refinery at Dayton, near Artesia, New Mexico, but decided not to do so at present. The Continental Oil Co. placed a refinery at Artesia with a capacity of 2,000 bbls., but this plant was only running about 600 bbls. at the close of the year. The same company also built a small plant at Farmington, New Mexico, which is also shut down.

The Standard Oil Co. of Indiana built a large cracking plant at Glenrock, Wyoming, to handle the cracking oil from the Continental Oil Co.'s plant there. The same firm has started the building of an addition to its Casper refinery and will install a canning plant at Casper to can oils and greases for the trade.

Results of Completed Work

In the matter of completed work in Wyoming there was little difference in the number of wells finished in 1925 and in 1924. A total of 651 completions was only 13 fewer than the previous year, but the 70,194 bbls. of initial daily production was 42,501 bbls. less than in 1924, and there were 31 more dry holes and 5 more gas wells. In oil wells completed the figures show a falling off of 50 last year. The average production per oil well last year was 128 bbls. as against 188 bbls. in 1924.

Montana, or rather the Sunburst Field of Montana, had a very good year, although a large number of dry holes were mixed with the producing completions. In Sunburst 344 wells were completed of which 233 were oil wells, 100 were dry and 11 were gassers. The total initial production is given as 53,392 bbls., or an average of 229 bbls. per well. An occasional gusher brought the general average up to considerably more than the average for Wyoming wells. The 395 completions in Montana represented a gain of 225 over the record for 1924 and the 54,283 bbls. in initial production was an increase of 26,539 bbls. over the results the year before. There was an increase of 127 in dry holes and of 6 in gas wells. It was a very busy year in northern Montana and this year is expected to see a repetition of it, especially as regards wildcatting the Sweetgrass Arch.

Colorado completed over five times as many wells in 1925 as in 1924, the total of 59 having been 48 more than in the previous year. The bulk of the new production came from Larimer and Moffat Counties. There were 34 dry holes, an increase of 29 over the previous year, and 6 gas wells or 4 more than in 1924. The average initial production per well was high, 527 bbls., but compared with the average of 2,332 bbls. per well the year before it does not at first glance appear so.

An interesting part of the Rocky Mountain division was the Artesia and San Juan fields of New Mexico. Outside of these fields only three wells were completed in New Mexico, in Saccorro, Chaves and Colfax Counties, and all were dry. A total of 150 wells were completed in Artesia and Eddy County and 27 in San Juan County. In all, 180 wells were finished in the State, an increase of 167 over the year before and the 23,156 bbls. of initial production was 20,849 bbls. more than the previous year had shown. There were 27 dry holes, an increase of 25, and 1 gas well. Both the San Juan and Artesia districts will be busy this year and there will be more wildcatting than last year in other parts of the State.

Some Production Comparisons

The Rocky Mountain region, Montana, Wyoming, Colorado, Utah and New Mexico combined, produced 35,620,198 bbls. of crude oil last year and compared to the 42,510,516 bbls. of the year before, this was a decrease of 6,890,318 bbls. in the year's results. Salt Creek, Wyoming, produced 21,680,070 bbls., a falling off of about 30 per cent from the total of 30,879,930 bbls. produced the year before.

The next largest field, Sunburst, Montana, produced 2,895,910 bbls. as compared with 1,220,415 bbls. the year before, a gain of 1,675,495 bbls., or 137 per cent.

The Moffat Field in Colorado produced 591,237 bbls. last year and 231,890 bbls. in 1924.

Grass Creek, Wyoming, made a gain from 1,090,360 bbls. in 1924 to 1,312,340 bbls. in 1925.

Artesia in New Mexico produced 797,859 bbls. last year.

Most of the other fields in the region showed a decline in production.

By States the 1925 production was, Montana (three field), 4,122,653 bbls.; Wyoming, 29,229,303 bbls.; Colorado, 1,171,625 bbls.; New Mexico, 1,096,617 bbls. The total for Wyoming compared with the 39,251,070 bbls. of the year before shows a decline in the production of that State of 10,021,767 bbls.

Salt Creek Reviewed

Salt Creek is the premier field of the Rocky Mountain region. The production comes mainly from the first and second

(Continued on Page 156-B)

ATLANTIC COAST PORT RECEIPTS DECLINE 3,700,000 BBLS. IN 1925

By N. O. Fanning

NEW YORK, Feb. 15. — Receipts of crude and refined oil at Atlantic Coast ports during 1925 are estimated at 176,282,000 bbls., compared with 179,982,000 bbls. in 1924, a decline of 3,700,000 bbls.

This decline is due principally to smaller receipts from the Pacific Coast. These totaled 22,713,000 bbls. in 1925, against 44,845,000 bbls. in 1924, a decrease of 22,132,000 bbls., or 50 per cent. Much of this decline was offset by larger receipts from the Gulf Coast, which aggregated 112,506,000 bbls. in 1925, compared with 93,948,000 bbls. in 1924, a gain of 18,558,000 bbls.

The fact of smaller receipts by water at Atlantic ports during 1925 than in 1924 in the face of larger consumption of oil indicates that eastern refiners and marketers depended more largely on pipe lines and tank cars for oil in 1925. This is partly proved by the larger shipments by Prairie Pipe Line Co. in 1925.

Receipts from the Gulf Coast in 1925 averaged 308,000 bbls. daily. Receipts from California average 62,000 bbls. daily. Imports from Mexico averaged 102,000 bbls. and other imports 11,000, making daily average imports from all countries 113,000 bbls.

The following table shows a comparison of daily average receipts from the various sources in 1925 and 1924:

	1925	1924
Gulf Coast	308,000	257,000
Pacific Coast	62,000	123,000
Imports	113,000	114,000
Total	483,000	494,000

Receipts during the latter part of 1925 were smaller than during the first half of the year, although December showed considerable improvement over the two previous months. In 1925 the largest receipts were in July and amounted to 17,404,000 bbls. The largest month for 1924 was in June, when receipts aggregated 17,336,000 bbls.

(Continued on Page 156-H)

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Central West Had a Prosperous Year

Much New Territory Discovered Which Will Be Developed in 1926; Better Crude Oil Prices Caused Fewer Abandonments; New Oil State Added

By Whit

The Central West Field enjoyed a prosperous year in field development work during 1925. This was brought about by a better price for crude than during either 1923 or 1924, the lowering of the price per foot of drilling and lower prices for supplies and almost everything required for the drilling of wells and putting them on power for pumping. Well owners also nursed their small strippers as they never did before, even when crude was at its peak during the World War.

Fewer wells were completed for the year in review than for 1924 and there was a small decrease in flush production, but regardless of this condition the average operator held a better bank account than at the close of the previous year. The total completions for 1925 in the Central West Field, including the Lima Field of northwestern Ohio, central Ohio, Indiana, Illinois, Michigan, Kentucky, Tennessee and Mississippi, were 3,080 wells, which yielded 42,471 bbls. in initial production; 765 dry holes and 394 gas wells. When compared with the 1924 figures this shows a decrease of 87 in completed wells, 4,589 bbls. new production and 14 gas wells, while in dry holes there was an increase of 60. During the year 502 old wells were abandoned in the Lima Field, Indiana and Illinois, against 856 for 1924, a decrease of 354, meaning that even the smallest stripper is being kept on the power pumping plants. There were 1,921 new oil wells in the fields mentioned for the year and their average initial production was a litte over 22 bbls. to the well.

Lima Field

Numerous slight extensions have been made to the producing portions of the Lima Field of northwestern Ohio during the year in review. Outside of the old defined limits of the field, the most important points at this time are in Shelby, Paulding, Hardin and Ottawa Counties. The most important find of the year taking the Lima Field in general was the completion of a purely wildcat venture more than 15 miles east and northeast of the extreme limits of the old Trenton Rock producing area of the Lima Field, by the Underwood Oil & Gas Co., in Catawba Township, Ottawa County, and between Port Clinton and Marblehead, which showed 20 bbls. from the Trenton sand, which was topped at 1,903 feet and drilled 273 feet in to a total depth of 2,176 feet. Its location is on the southwest corner of the Ralph Hines farm, in the southwest quarter of Section 26. At the close of the year the second test is being drilled by the same company on the John Lauden farm, Section 26, and should it prove a producer will mean much for the future development of that section of the field. The Ohio Oil Co. and others hold large acreage between the Elmore and Limestone fields of the same county and the advent of spring should see a number of tests under way. Lands have been leased clear through from Elmore to Marblehead, which lies between Lake Erie and Sandusky Bay.

No large producers were recorded in the Lima Field during the year, the best being a 100-bbl. flush well drilled by the Base Line Oil Co. on the E. Latschaw farm in Section 32, Liberty Township, Hancock County, southwest of Findlay.

Deeper drilling into the Trenton Rock, the producing sands of the Lima Field, are bringing results, as oil has been found as deep as 450 feet in this formation, while in the early days from 50 to 100 feet in was considered sufficient depth to recover all the oil that could be found in the producing formation.

The first completion of the current year in the Lima Field was a test made by the Wayne Oil Co., on the Charles Friend farm, Section 23, Spencer Township, Allen County, with a flush of 30 bbls. extending the producing area about 100 rods.

Two other important finds were made during January, when the Fowler Brothers Petroleum Co. drilled in a wildcat on the Fred Preiser farm, Section 20, Washington Township, Auglaize County, opening up a vast area of territory for development work near Wapakonetta. The well was not large, only having a flush of 28 bbls., but led to further work in that area. The other was a gas find of importance, when Callahan & Mayhew drilled a test on the Florence heirs farm in Section 25, Washington Township, Mercer County, which was credited with a flush volume of 4,000,000 feet from the Niagara limestone, at a depth of 601 feet.

February recorded only two important finds. One was a test by Gage & Eurnell on the Deloy Speck farm in Section 32, Perrysburg Township, Wood County, with a flush of 10 bbls. at a depth of 1,292 feet. While not a large well its location meant much for the future. The other was the Roundhead Oil & Gas Co.'s No. 5 on the Erwin Hites farm in the Roundhead Field of McDonel Township, Hardin County, with a flush of 80 bbls. at 1,499 feet.

March had three wells of interest. In the Payne Field of Harrison Township, Paulding County, John T. Schenck got a 76-bbl. flush well in a second attempt on the C. C. Springer farm, Section 34, at 1,457 feet. Boldheimer Oil & Gas Co.'s wildcat on the Boldheimer farm, Section 22, Cynthian Township, Shelby County, produced 25 bbls. the first 24 hours, and made quite an extension to the producing area. In the extreme southwestern part of Auglaize County, in Jackson Township, a second test by D. F. Mooney and others on the M. Steineman, Section 28, showed 20 bbls. This part of the field should get a good play in the new year.

April, usually a slow month for drilling operations on account of the continuous rains, showed results in advance work. In Auglaize County the best completion for the month was made by C. C. Romshe when he brought in his No. 4 J. F. Kohler, Section 17, Douchouquet Township, for 60 bbls. In the same township, the Boston-Southwestern Oil & Gas Co. in a test on the Charles Freck farm, Section 17, landed a 40-bbl. flush well, and in its No. 2 Fred Preiser, Section 20, showed 45 bbls. The Star Oil Co. extended the field a short distance by drilling in a 15-bbl. well in a test on the George Huberkamp farm, Section 20, Washington Township, same county. R. Allen and others found a 20-bbl. well in a wildcat on the Saltzman farm, Section 35, Biglick Township, Hancock County, while Wolfe Brothers and others extended the field of Spencer Township, Allen County, with a 15-bbl. well on the John Beerman farm, Section 23. Mercer County was not forgotten for it was brought before the public when Mack P. Colt drilled in his initial well on the W. M. Miller farm, Section 4, Center Township, for a flush of 15 bbls., and at the close of the year this lease has 13 producing wells on the pump. The lease is located on territory that was supposed in years back to be off side.

Good Results in May and June

May opened up with a well of size in McDonel Township, Hardin County, a new extension to the south of the old producing lines of the Lima Field, when the Boston-Southwestern Oil & Gas Co. brought in its No. 1 on the Mary Clark Irwin farm in advance of the Roundhead Pool for a flush of 80 bbls. at a depth of 1,495 feet. Some years ago Russ Williams of Perryburg, Ohio, held a lease on the J. W. Sterling 80 acres, Section 21, Henry Township, Wood County, with five old wells doing 5 bbls. daily. These wells at that time were only about 15 feet in the Trenton and were never stirred up by a shot. In that year the wells and lease were sold at an approximate price of $3,300 and was purchased by residents of Hammansburg, a short distance north of North Baltimore. The wells were cleaned out, given shots and proved relatively wonderful producers. Later on the property was sold to the Donald Oil & Gas Co. at a handsome profit and still producing its quota of oil. It was in this month that the owners drilled No. 21 well, which had a flush of 35 bbls., which speaks well for the Trenton Rock area. Paulding County is credited with another good well drilled by John T. Schenck in No. 3 Springer, Section 34, Harrison Township, with a flush of 70 bbls. May also showed further extensions in the producing areas of Moulton, Salem and Jackson Townships, of Auglaize County. Slagel & Johnston drilled in a 56-bbl. well on the Frank Danzig, Section 16, Cynthian Township, Shelby County.

(Continued on Page 240)

SUMMARY OF FIELD OPERATIONS FOR 1925

LIMA FIELD

Completions in the Lima Field of northwestern Ohio during the year 1925 were recorded each month as follows:

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	27	253	4	2	18
February	26	296	7	0	3
March	37	395	7	2	24
April	59	803	11	2	16
May	64	906	11	1	21
June	83	974	9	4	75
July	58	616	10	0	33
August	60	940	4	1	20
September	77	935	8	5	20
October	48	556	7	1	32
November	44	420	7	6	36
December	44	616	4	1	39
Total 1925	627	7,710	89	26	337
Total 1924	592	9,745	63	42	621
Difference	35	2,035	26	16	284

The above wells were distributed among the various counties of the Lima Field as follows:

County—	Comp.	Prod.	Dry	Gas	Abd.
Wood	113	1,157	26	0	99
Hancock	79	1,325	6	2	6
Allen	49	564	4	0	57
Auglaize	58	781	13	0	20
Sandusky	53	362	3	0	83
Mercer	81	736	7	11	27
Van Wert	17	176	3	0	10
Seneca	7	56	4	0	16
Lucas	10	65	0	1	11
Ottawa	28	327	1	0	4
Darke	13	65	6	0	1
Shelby	63	1,030	8	7	0
Hardin	20	619	4	3	0
Paulding	23	446	1	1	0
Crawford	2	0	2	0	0
Wyandot	1	0	1	0	0
Henry	0	0	0	0	3
Total	627	7,710	89	26	337

CENTRAL OHIO

Completions in the Central Ohio fields for the year 1925 were by months as follows:

Month—	Comp.	Prod.	Dry	Gas
January	27	29	4	20
February	29	5	9	29
March	27	115	7	15
April	29	171	7	13
May	26	233	3	15
June	27	40	9	16
July	39	155	14	15
August	54	531	17	27
September	40	95	12	21
October	42	296	7	28
November	52	426	9	36
December	32	188	5	20
Total 1925	434	2,284	103	255
Total 1924	605	1,993	247	385
Difference	171	291	144	130

The above wells were distributed among the various counties of Central Ohio as follows:

County—	Comp.	Prod.	Dry	Gas
Fairfield	4	0	1	3
Knox	6	0	0	6
Ashland	45	0	10	35
Medina	37	59	11	14
Lorain	55	10	13	42
Wayne	60	365	14	33
Holmes	110	1,624	24	50
Jackson	4	0	1	3
Hocking	1	0	0	1
Vinton	3	1	1	1
Coshocton	16	158	1	13
Richland	4	4	0	3
Athens	73	29	23	43
Cuyahoga	5	0	1	4
Meigs	3	29	0	0
Summitt	2	0	2	0
Licking	1	5	0	0
Huron	1	0	1	0
Rose	1	0	1	0
Guernsey	3	0	0	3
Lawrence	1	0	0	1
Totdl	434	2,284	103	255

Note—There were 76 oil wells completed in Central Ohio during 1925.

INDIANA

Completions in the Indiana fields for the year 1925 were by months as follows:

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	8	93	3	0	5
February	7	70	3	0	21
March	6	125	2	1	0
April	6	89	1	0	0
May	6	75	2	1	0
June	17	139	6	0	7
July	16	175	6	1	36
August	11	75	7	1	0
September	18	347	3	1	14
October	8	166	2	0	2
November	14	165	2	0	14
December	11	76	4	0	15
Total 1925	128	1,600	41	5	114
Total 1924	150	3,445	46	11	178
Difference	22	1,845	5	6	64

The above wells were distributed among the various counties of Indiana as follows:

County—	Comp.	Prod.	Dry	Gas	Abd.
Wells	2	5	1	0	3
Blackford	3	2	2	0	25
Jay	33	433	7	0	57
Adams	11	150	1	0	0
Grant	0	0	0	0	7
Delaware	8	33	5	0	4
Gibson	20	270	7	0	2
Pike	20	382	6	0	15
Sullivan	19	35	9	5	0
Knox	2	0	2	0	1
Allen	4	95	0	0	0
Daviess	6	195	1	0	0
Total	128	1,600	41	5	114

ILLINOIS

Completions in the Illinois fields for the year 1925 were by months as follows:

Month—	Comp.	Prod.	Dry	Gas	Abd.
January	14	287	5	0	1
February	8	140	4	0	3
March	16	572	4	0	9
April	16	172	9	0	9
May	23	281	10	1	4
June	24	382	7	0	4
July	24	821	6	1	0
August	22	338	4	0	7
September	19	844	3	1	0
October	25	2,635	5	1	2
November	26	2,377	6	1	2
December	29	1,919	7	0	10
Total 1925	245	10,759	70	5	51
Total 1924	173	5,079	55	2	57
Difference	72	5,680	15	3	6

The above wells were distributed among the various counties of Illinois as follows:

County—	Comp.	Prod.	Dry	Gas	Abd.
Clark	71	1,808	15	0	0
Cumberland	4	11	0	0	0
Crawford	34	342	5	3	14
Lawrence	17	466	3	0	28
Clinton	0	0	0	0	1
Marion	11	127	5	0	2
Wabash	90	7,915	31	2	4
Jasper	1	0	1	0	0
Coles	7	0	7	0	0
Washington	2	0	2	0	2
McDonough	1	0	1	0	0
Morgan	1	0	0	0	0
Jackson	6	85	0	0	0
Total	245	10,759	70	5	51

Central West Summary

Results of field operations in 1925 in eight divisions:

Field—	Comp.	Prod.	Dry	Gas	Old Wells Abd.
Lima	627	7,710	89	26	337
Central Ohio	434	2,284	103	255	0
Indiana	128	1,600	41	5	114
Illinois	245	10,759	70	5	51
Michigan	2	60	0	0	0
Kentucky	1,577	15,837	318	99	0
Tennessee	58	4,221	35	4	0
Mississippi	9	0	9	0	0
Total 1925	3,080	42,471	765	394	502
Total 1924	3,167	47,060	705	408	856
Difference	87	7,589	60	14	354

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Tennessee Showed Progress in 1925

Important Events in the Kentucky Fields Were Few; Crude Prices Discouraged Wildcatting; Mississippi Operators Still Hopeful of Success

By Vern T. Whitney

Taking the State of Kentucky as a whole, the year 1925 showed a falling off in oil activity. There were 1,577 completions during the year, of which 418 were dry and 99 were gassers. Initial production totalled 15,837 bbls. Compared with 1924, these figures show a decline of 28 completions and 9,762 bbls. in new production. There were 50 more dry holes and 38 more gas wells.

Western Kentucky led, as it did last year; 1,029 completions having been credited to the west end and 548 to the eastern end.

An Important Year in Tennessee

During 1925, the new pool at Tinsley's Bottom in Clay and Jackson Counties, Tennessee, has been extensively developed and connected with the railroad by pipe line; the Sunbright Pool in Morgan County, Tennessee, has seen several successful completions and is also shipping oil. These are the first commercial developments in the Volunteer State since the opening of the Glenmary Pool eight years ago.

Little Wildcatting

During the year there were only 140 outlying tests drilled in Kentucky, and while the old pools were extended to some extent, no new territory was opened. The Greenup County Pool, which held considerable promise at the beginning of the year, was a rank failure. The discovery well, drilled by Chenault Brothers, near Grayson, was followed by a large number of tests scattered in every direction, all dry. In Carter County, adjoining Greenup, several tests were also without results.

In Rockcastle County, near Broadhead, a well drilled in December had a good oil showing in the Irvine sand at 300 feet. It was being carried to a lower depth as the year closed.

The Standard Oil Co. of Kentucky's wildcat 10 miles southwest of London, Laurel County, was in December showing for a producer at 710 feet, where a sand was penetrated which filled the hole to the extent of 300 feet with oil.

Gas Fields Extended

The Fych Oil & Gas Co. early in 1925 opened a new gas pool in the Licking River section of Magoffin County with a well estimated at 6,000,000 feet, followed by a 2,000,000-foot well on Trace Fork of Licking River, drilled by the Pure Oil Co. These tests have been followed by several successes.

In Clay County, the Standard Oil Co. of Kentucky brought in a 2,000,000-foot gasser at Oneida, in January, and another of equal volume on the Wildcat Branch of Goose Creek, 3 miles from its first venture. On Bull Creek, also in Clay County, Coleman & Benton got a 500,000-foot gas well from the Cornieferous sand. Several wells have followed these initial attempts and undoubtedly a good gas field will be developed in this county during 1926.

In Floyd County, where there has been gas production for some time, important extensions were made to the pool, placing this county in the lead in the State in gas production. Gas is found in three sands, the Salt sand at 1,000 feet, the Maxon sand at 1,600 feet and the Berea sand at 2,800 feet. The operators generally get 12 cents per thousand feet from the Louisville Gas & Electric Co.

On the Petroleum Exploration's extension holdings in Owsley County, two tests were drilled near Needham's Post Office, on Brush Creek, in September, making around 1,000,000 feet each, proving up much additional territory. The Petroleum Exploration is planning a line from this field to Winchester and other nearby towns.

Western Kentucky shows a few more completions during the year in review than in 1924. This is due to the active campaign in Barren County. There were 1,029 completions in 1925, while 1924 showed 969, with a total initial production of 10,964 bbls., 302 dry holes and 15 gas wells. This is an increase of 60 in completions and a decrease of 3,689 bbls. in flush output. Two less gas wells were drilled in 1925 when compared with 1924.

Barren County

Barren County leads the entire State in new work for the year, there having been twice as many wells completed in this county as in any other. In January the county produced 10,000 bbls., which was increased each month until September when it showed better than 26,000 bbls., holding steadily at about this figure for the balance of the year.

A new pool, known as the Whitlock, was opened in August in Barren County, 4 miles east of Glasgow, near the Fish Hatchery on the Edmonton Pike, by Whitlock and others. To date eight wells have been drilled, all of them producers doing from 8 to 10 bbls. each, at a depth of 140 feet below the black shale.

The Beaver Creek Pool, which was opened in the year by the Consolidated Gas Co., has shown some splendid wells. Recent completions in this pool have connected it to the Hall Baker Pool, 2 miles south of the discovery lease. There are now 78 producing wells in the Hall Baker Pool connected to the gathering system of the Paragon Development Co., producing an average of 3.29 bbls. per well.

The Emery-Moore Pool, which is now three years old, has had a number of good extensions during the year, and now substantially embraces the Gorby Pool. The Emery-Moore Pool has 270 wells connected to the Paragon line, averaging 1.53 bbls. per well, and the Gorby Pool has 48 wells on the pipe line with an average production of 2.85 bbls. to the well.

The most important extension of the Emery-Moore Pool was made early in October when the Kopel Oil Co.'s well on the Meyers farm, 2½ miles southwest of the old pool, on the Lower Bowling Green road, came in for 15 bbls. at 180 feet below the black shale. In November the Wood Oil Co.'s Jewell well, which made 4 bbls. at 165 feet below the shale, extended the pool a half mile west.

One of the largest wells ever brought in in Barren County was Lewis Emery, Jr. & Son's No. 1 Preston, drilled in September, which came in for 72 bbls. per day in a sand found at 167 feet below the black shale, extending the Gorby Pool 1,500 feet southwest, bringing it close to the Emery-Moore wells.

Fourteen tests drilled in attempts to open new territory in various parts of the county were dry. Ten miles west of Glasgow and 3 miles south of Glasgow Junction, on the Duke farm, the Emery interests drilled a test to a depth of 755 feet, 235 feet below the shale, this being the deepest test in the county for the year.

Owensboro Field

The year brought much to the Owensboro Field, in part of Hancock, Ohio and Daviess Counties, although it opened with little doing. In April the Pennsylvania-Indiana Oil Syndicate drilled in its No. 1 on the Colonel Powers farm with 150 bbls. flush production, the largest well ever drilled in the field. This opened a wide extension in the Swope Pool and was followed by many tests, not only in the Swope section, but in all parts of the district. In July, the Leeper Oil Co. completed a 50-bbl. well in the Jett sand on the J. M. Collier farm at Collier Station, 1½ miles southwest of the Swope, in Daviess County, extending the Collier Pool to the north. In November, the same company opened what appears to be a new Jett Pool, 3 miles west of Herbert School House. The discovery well came in on the Veach place as a small producer, but it shows the presence of the Jett sand and has led to the location of other tests nearby.

Another important well in this field was drilled by the White Plains Oil & Gas Co. on the Midkiff lease, 5 miles south of the Swope Pool. It was finished in November with a flush of 20 bbls. from the Barlow sand at 750 feet, opening an entirely new Barlow sand pool. The White Plains Co. at the close of the year was drilling two more wells in the immediate vicinity, the Pennsylvania-Indiana Syndicate was drilling one, Bolling & Lowman were rigging up on the Midkiff, and other operators had obtained leases and planned to commence drilling after the first of the year. The Indian Pipe Line Corp. considered this discovery of sufficient importance to commence the construction of a 5-mile pipe line after the completions of the first well. This well indicates to the operators that the trend of the productive sands is to the south, knowledge which has been sought by tests in every direction from the Swope area, resulting in many dry holes.

There are now 180 wells producing from the Jett and Barlow sands in the Owensboro district with an average production of 5 bbls. per well, the best average production in Western Kentucky. Production of the field has shown a consistent increase since the opening of the Indian Pipe Line. At the start of the year the total production of the field was 11,152 bbls., increasing gradually to 24,000 bbls. in October, the best month of the year.

At present there are 11 wells drilling outside locations, any of which, if successful, will open new pools or extend producing ones.

Cumberland County

The most important item in Cumberland County was a semi-wildcat well of the Alta Oil Co. on the Elam Cheatham farm, on the West Fork of Crocus Creek, in northeastern Cumberland County, about 10 miles from production, completed in September, for 250 bbls. from the First Sunnybrook sand at 265 feet. In October the same company drilled a well on the Dick Cheatham farm, adjoining the discovery farm, which came in with a production of about 1,500 bbls. per day from a the First Sunnybrook sand at 256 feet. This was the largest well drilled in the State during the year, and one of the largest ever drilled in the Sunnybrook formation.

Another successful outside location was drilled by Wilcox Brothers on the Melton farm, in October, at the head of Williams Prong of Sulphur Creek, between the Sulphur Creek anticline and the Meshack uplift, on the south flank of Raft Creek Dome. The well was finished in the First Sunnybrook sand at 365 feet and pumped 25 bbls., extending production 1½ miles east of the Kettle

(Continued on Page 244)

SUMMARY OF FIELD OPERATIONS FOR 1925

KENTUCKY IN 1925

Completions in both eastern and western divisions of the Kentucky fields for 1925 were by months as follows:

Month—	Comp.	Prod.	Dry	Gas
January	92	1,206	24	5
February	136	1,405	35	8
March	94	661	27	7
April	178	2,511	46	11
May	137	1,694	31	10
June	162	1,695	45	8
July	141	21,059	36	11
August	117	830	34	7
September	126	883	29	5
October	133	1,385	35	3
November	121	1,254	27	16
December	150	1,254	39	8
Total 1925	1,577	15,837	418	99
Total 1924	1,605	25,599	368	61
Difference	28	9,762	50	38

The above wells were distributed among the various counties as follows:

County—	Comp.	Prod.	Dry	Gas
Warren	172	2,319	40	0
Allen	195	1,419	82	0
Barren	415	2,925	90	10
Owensboro	138	1,319	49	1
Muhlenburg	1	0	0	1
Hopkins	3	92	0	0
Cumberland-Monroe	73	2,783	28	3
Russell	3	10	2	0
Henry	1	2	0	0
Logan	4	21	2	0
Simpson	11	58	3	0
Metcalf	4	15	3	0
Greene	1	0	1	0
Edmonson	1	2	0	0
Grayson	1	0	1	0
Meade	1	0	1	0
Western Kentucky	1,029	10,964	302	15
Wayne	79	609	31	0
Greenup	14	10	11	1
McCrary	1	5	0	0
Estill	16	40	2	0
Wolfe	11	88	1	1
Morgan	11	40	7	0
Lee-Owsley	72	494	22	10
Lawrence-Johnson	127	2,732	6	0
Johnson-Magoffin	115	768	12	6
Floyd	61	25	8	49
Elliott	7	26	4	0
Clay	4	0	1	3
Rowan	2	0	0	2
Breathitt	2	0	1	1
Jackson	7	0	5	2
Madison	1	0	1	0
Fleming	1	5	0	0
Bell	1	0	1	0
Boyd	2	20	0	1
Martin	8	0	0	8
Laurel	1	0	1	0
Knox	1	0	1	0
Powell	3	11	0	0
Harlan	1	0	1	0
Total 1925	1,577	15,837	418	99

TENNESSEE

The Tennesssee completions for 1925 were distributed by months as follows:

Month—	Comp.	Prod.	Dry	Gas
January	2	0	1	1
February	5	325	3	0
April	2	125	0	0
May	6	0	5	1
June	10	700	6	0
August	5	0	4	1
September	5	20	4	0
October	8	240	4	1
November	5	300	3	0
December	10	2,511	5	0
Total 1925	58	4,221	35	4
Total 1924	28	1,199	19	0
Difference	30	3,022	16	4

The above wells were distributed among the various counties as follows:

County—	Comp.	Prod.	Dry	Gas
Clay	41	4,098	36	2
Morgan	8	123	2	0
Scott	1	0	1	0
Sumner	2	0	1	1
Overton	1	0	1	0
Putnam	1	0	0	1
Macon	1	0	1	0
DeKalb	2	0	2	0
Hardeman	1	0	1	0
Total 1925	58	4,221	35	4

MISSISSIPPI

The completed wells in Mississippi during the year 1925 were by months as follows:

Month—	Comp.	Prod.	Dry
March	1	0	1
April	7	0	7
December	1	0	1
Total 1925	9	0	9
Total 1924	6	0	6
Difference	3	0	3

The above wells were distributed among the various counties as follows:

County—	Comp.	Prod.	Dry
Rankin	2	0	2
Union	1	0	1
Copiah	2	0	2
Leake	1	0	1
Madison	1	0	1
Perry	1	0	1
Warren	1	0	1
Total 1925	9	0	9

No completions were reported during 1925 in either Georgia or Alabama.

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Eastern Fields Did Well During 1925

More Completed Work, and Greater Initial Production in Old Southwest Fields. Northern Fields Held Their Own, With Bradford Unusually Active

By D. S. Wakenight

Developments in the southwest Pennsylvania, West Virginia and southeastern Ohio fields in 1925 do not call for extended mention for the reason that they were so nearly featureless from the beginning down to the close of the year. There was one unusually large initial producer completed and but one new pool discovered. For the greater part of the year the crude market was low and operators had no incentive to push development work. However, the new production was considerably greater than in the preceding year and due almost entirely to the completion of good producers in the deep sand territory in southeastern Ohio. West Virginia had the only strictly new pool that promises to be of considerable dimensions.

Southwest Pennsylvania

The surprise of the year is located in the southwest Pennsylvania fields, and on the Anderson farm in Morris Township, Greene County. When drilled into the Gordon sand pay the well had an initial production of 665 bbls., giving it the distinction of being the largest completed in the eastern fields during the year. Another well in the same locality was completed on the Rutan farm but its initial production was one-half that of the Anderson farm gusher.

From the beginning to the close of the year, Greene County was the most active in the southwest fields, completing more wells and furnishing a great deal more new production than the three other southwest counties combined. For the most part the work in all sections was confined to old and defined territory and outside of Greene County the average size of the wells very small. Aside from the possibility of more good wells in the vicinity of the Anderson farm, on which operations are now held up by litigation, the southwest fields do not look at all promising for furnishing any great amount of new production. Future operations as in the past years will be confined to the old producing districts where there is still room for locations for new wells.

West Virginia

The West Virginia fields completed more wells and got more new production than in 1924. All through the year the oil and gas companies were very active in the gas areas and completed almost half as many gas wells as oil producers and dry holes. The demand for gas was so great that the oil companies found it more profitable to drill for gas than light oil wells. Exploration was carried into a number of the southwest counties and new gas pools discovered. The most spectacular was that at Pratt, Cabin Creek district, Kanawha County. The most excitement centered in the town of Pratt and for a brief few months there was a town lot development seldom exceeded. Owing to the proximity of the wells, their decline was rapid. Until recently there was no market for a good deal of this gas, but the Hope Natural Gas Co. having extended a 100-mile extension of its main line into the territory will give it an outlet to a market.

Promising New Pool

The only promising oil pool discovered during the year is located in Henry district, Clay County. The wells are not large, running from 5 to 75 bbls. at time of completion. The oil is found in the Big Injun sand and the daily production from 22 wells at the close of the year a little more than 400 bbls. Inside or in the immediate vicinity of the pool no dry holes have been encountered, leaving its dimensions to be determined by future tests.

At the town of Scott, Scott district, Putnam County, a Salt sand development was discovered and for a short time a town lot development was in full swing and created a good deal of excitement. All efforts to extend the producing limits of the pool failed and by the close of the year there was very little doing. It only took about 25 wells to show that the producing area of the pool is very small.

In Harvey district, Mingo County, there is a Maxon sand pool that may develop into one of some proportions. The wells are small and the production of the pool not more than 100 bbls. a day from 20 wells. Development work has been somewhat retarded on account of no pipe and having to ship the oil by tank cars.

Southeastern Ohio

The southeastern Ohio fields were fairly active during the year. More wells were completed and the new production was considerably more than in the preceding year. Due principally to the completion of good producers in the deep sand territory, the new production for the year amounted to more than twice that of southwest Pennsylvania and West Virginia. For a number of years the deep territory has been furnishing the greater part of the new production in the three divisions and will without a doubt continue to do so during the years to come. There is still room for a lot of development work in this territory. Much of the work completed during the year was of the experimental kind, testing out leases, preparatory to an atcive drilling campaign when the market advances to a point that will warrant the excessive expense to drill for production into the Clinton sand.

Trenton Rock Drilling Abandoned

Efforts for the time being have been abandoned for finding production in the Trenton Rock. To reach the Trenton Rock pay the wells have to be put down to a depth in excess of 4,000 feet. This makes the cost prohibitive to drill when the market is low. At some future time when the market is very much higher than at present, operators may be induced to go back and give it another trial. There are still those who are of the opinion that the few wells in the vicinity of Newark, Licking County, are not the only producers that can be had in that locality.

The only worthwhile shallow sand pool is located in York Township, Morgan County. This development was carried over from the previous year and all through this year operations were quite active. Some of the best wells had an initial production of 80 bbls. The average, however, was less than half as much. Operations are still active. Meigs and Guernsey Counties were given a more thorough testing than at any time in the past and with indifferent results. To the eastern operator and producer the outlook for a prosperous year is much more promising than at a year ago.

Random Notes

During the year the Peoples Natural Gas Co. drilled its second test on the Booth-Flinn property, near Ligonier, Westmoreland County, Pennsylvania, to a total depth of 7,756 feet and abandoned it with a clean hole. Some gas was found at two depths, 7,428 feet and 7,442 feet, in this well, but not enough to justify additional drilling to so great a depth. However, it is the deepest well ever drilled in this or any other country.

In Union district, Harrison County, the Reserve Gas Co.'s deep test on the Smith Brothers' farm has been put down to a depth of 6,824 feet. While putting in a string of 6⅝-inch casing it parted at 400 feet from the top and the crew is now fishing. It is proposed, barring accidents, to put this well down deeper than the Ligonier deep well.

One Big Deal

The only deal of any considerable magnitude that took place during the year was when the Peoples Natural Gas Co. took over the holdings of the American Natural Gas Co., including all of its oil and gas wells and leases and equipment. The deal is said to have been a consideration of close to $12,000,000.

Another deal of some magnitude, consideration not make known, was that of the Hope Natural Gas Co. taking over a number of carbon black companies' holdings and that of G. L. Cabot in a number of counties in West Virginia.

Completions by Months
Southwest Pennsylvania

	Comp.	Prod.	Dry	Gas
January	20	15	6	9
February	26	20	4	16
March	11	7	5	4
April	17	37	2	7
May	15	26	1	8
June	22	169	3	10
July	12	2	0	11
August	17	344	7	5
September	21	735	4	10
October	17	24	5	6
November	14	31	4	6
December	26	68	5	12
Total	218	1,478	46	104

West Virginia

	Comp.	Prod.	Dry	Gas
January	93	314	14	50
February	65	262	10	35
March	73	94	12	44
April	98	217	16	54
May	92	273	19	46
June	109	607	14	56
July	111	465	22	54
August	115	627	18	51
September	87	409	12	39
October	86	233	15	36
November	106	281	27	50
December	108	515	16	54
Total	1,143	4,297	195	569

Southeastern Ohio

	Comp.	Prod.	Dry	Gas
January	63	778	19	7
February	56	488	11	8
March	74	692	12	13
April	79	997	16	9
May	96	678	23	13
June	102	1,023	25	15
July	111	830	22	16
August	104	1,106	25	13
September	87	875	20	11
October	94	1,301	16	21
November	87	729	20	18
December	80	1,545	13	12
Total	1,033	11,042	222	156

Completions by States

	Comp.	Prod.	Dry	Gas
S. W. Pa.	218	1,478	46	104
West Va.	1,143	4,297	195	569
S. E. Ohio	1,033	11,042	222	156
Total, 1925	2,394	16,817	463	829
Total, 1924	2,212	11,994	490	959
Difference	182	4,823	27	130

New York and Northwest Pennsylvania

Despite low prices for crude oil of the Pennsylvania grade, so low in most districts that operations could be conducted only at a loss, there were 145 more wells completed in New York and northwestern Pennsylvania during 1925 than in 1924.

This increase in the number of completions was largely due to the activity in the Bradford flood territory, where the flood is working out successfully and where the production of the wells completed is greater than in the other old fields of Pennsylvania. The Bradford fields made a remarkable record for the year with only 19 dry holes out of 1,146 completions, a record unequaled in any section of the country.

The initial production of the New York and northwestern Pennsylvania completions for 1925 amounted to 4,754 bbls., which is an increase of 777 when compared with the figures for the previous year. Dry holes aggregated 105, a decrease of 21, and gas completions aggregated 119, a gain of 45.

Outside of the Bradford Field the operations during the year were of a routine nature and nothing of any consequence was developed.

At the start of the new year the most interesting thing in these fields is the experiment with soda solution in connection with the flood in the Bradford fields. Experiments conducted by Government experts indicated that there was a good possibility that such a solution would produce good results and some of the companies in the Bradford territory as a result are giving it a trial. However, on account of the slowness at which the flood travels it will be at least a year before the results of the experiment become known and it may be considerably longer than that.

The result of field work for 1925 in the various fields of New York and northwestern Pennsylvania follow:

New York and Northwest Pennsylvania
Summary of completed work in 1925

Fields—	Comp.	Prod.	Dry	Gas
Allegany	288	489	2	1
Bradford	1,146	2,874	19	12
Middle Field	126	567	11	11
Venango-Clarion	426	554	29	48
Butler-Armstrong	179	270	44	47
Totals, 1925	2,145	4,754	105	119
Totals, 1924	2,000	3,977	126	74
Difference	145	777	21	45

OIL AND GAS EXPLORATIONS IN WESTERN CANADA THE PAST YEAR

By Victor Lauriston

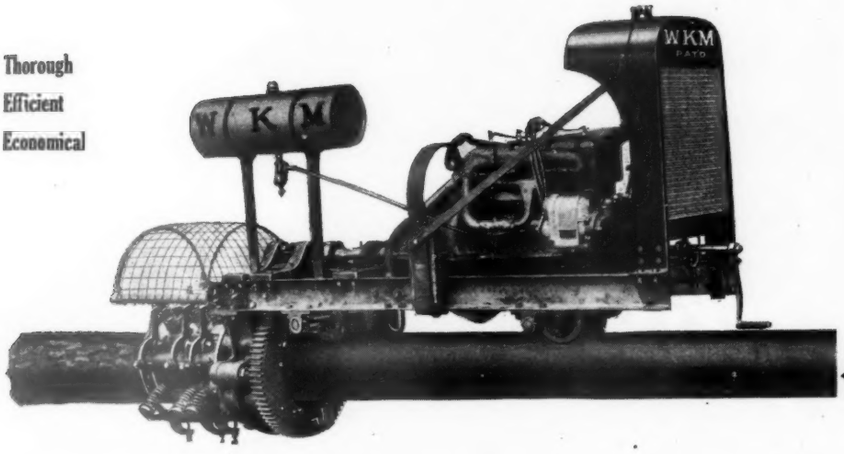
CHATHAM, Ont., Feb. 13.—In the realm of petroleum development, the Turner Valley Field, southwest of Calgary, Alberta, was the center of interest for Canadian oil operators during 1925. This field, first attracted notice by the small production of light oil which in 1913 started the famous Calgary boom. For nearly 10 years it maintained a small production of oil and light gas. A little over a year ago the completion of the Royalite Oil Co.'s No. 4 naphtha well changed the entire situation.

The Royalite Oil Co., a subsidiary of Imperial Oil, Ltd., had several years before taken over the Dingman properties in the Turner Valley Field, and had started No. 4 well as a test of the deeper horizons. In October, 1924, this well encountered in the Madison limestone at 3,740 feet a heavy flow of wet or gasoline gas, estimated around 20,000,000 feet a day under exceedingly heavy pressure. There was an incidental production, condensed from this wet gas, of around 250 bbls. a day of crude naphtha. With considerable difficulty the well was got in shape for steady production; and by spring the daily crude naphtha production had increased to an average, since pretty well maintained, of around 500 bbls. a day. Figures of the actual production for several months of 1925 are, in barrels: June, 14,049; July, 15,318; August, 14,379. September production was reported around 15,000 bbls. The product is a high grade crude naphtha, of 73 specific gravity; which is lighter than ordinary commercial gasoline. The Royalite No. 4 is stated to be the only well of its kind in the world, and its aggregate 1925 production of

(Continued on page 200)

W-K-M Pipe Cleaning Machine——Cleans every particle of rust and scale off pipe

Thorough
Efficient
Economical



Until recently, the usual method of cleaning pipe has been to scrape and brush it by hand; this has not only been very slow and laborious, but was not even reasonably a satisfactory method. THIS MACHINE operates mechanically; it cleans off hard rust, scale and corrosion THOROUGHLY on bottom as on the top of pipe, cleans screw couplings and cleans out the pits.

Outstanding Features of Operation

The cleaning is done by a series of sharp-toothed cutting wheels which are revolved rapidly around the outside of the pipe.

These sharp toothed cutters pulverize the rust and scale and break it off the pipe in small particles about the size of cornmeal.

A series of brushes then clean off all of the loose dirt and leave the pipe absolutely free from scale. Even the pits are cleaned out thoroughly and the pipe is cleaned just as well on the bottom as on the top.

Provision is made so that the revolving head automatically expands to go over ordinary screw couplings which are cleaned just as well as the balance of the pipe.

The W-K-M Pipe Cleaning Machine is operated by a light weight gasoline motor which revolves the cutting head at the rate of from 100 to 120 revolutions per minute around the pipe.

At the same time the machine travels along the pipe line which has been raised up out of the ditch and put on 4x6 skids.

When the machine comes to a skid the line is raised by a pole or by a winch and the skid is moved from in front and put in directly behind it so that the machine is not stopped in its traveling along the pipe line to change skids.

Only one man and a helper are necessary to operate a machine.

The traveling speed of the machine can be controlled entirely by the operator, from nothing to six feet per minute. In this way the machine can be run slowly where the pipe is very hard to clean, but can be run faster where the scale and rust is not so hard to take off.

The same machine can be used as a stationary machine for cleaning single joints of pipe.

Superior Work to Hand Labor at One-fifth the Cost

Hand labor in cleaning pipe lines has been of questionable value due to difficulty in cleaning the underside of the pipe. This machine cleans THOROUGHLY all the way round the pipe, putting same in favorable condition for insulating against further corrosion.

The W-K-M Pipe Cleaning Machine varies in speed according to severity of rust, scale or corrosion from nothing to six feet per minute.

In all cases it has been found that this machine will do better work than has ever been done by hand at about 20% of what it cost to clean by hand.

Cleans Loaded Pipe Lines

It is unnecessary to shut down pumps as the machine does not endanger the line in any way; in a majority of cases lines are operated at full capacity during the cleaning and insulating process.

Five-Mile Service Will Pay for Machine

It has been demonstrated by companies now using the W-K-M Pipe Cleaning Machine that it will pay for itself on a maximum of five miles on the pipe line.

A number of major pipe line companies are now using from one to three of these machines in their work and the machine has been entirely satisfactory in each case.

Size Limitations:

W-K-M Pipe Cleaning Machines are made in different sizes to clean anything from 4-inch to 12-inch pipe.

A larger size for cleaning 16-inch pipe is in the course of development.

Satisfactory Work Guaranteed

Each machine is sold outright under guarantee to do absolutely satisfactory work. It can be operated by any reasonably good mechanic after one or two days' instruction by our representative.

Further Information Cheerfully Furnished on Request

W-K-M CO., INC.

[Registered Trade Name]

Manufacturers and Distributors of Oil Field Specialties

West Bldg., Houston, Tex.

AXELSON MACHINE COMPANY

General Office and Western Factory: Corner Boyle Ave. and Randolph St., Los Angeles, Calif. P. O. Box 337. Eastern Sucker Rod Factory: 3844 Walsh St., St. Louis, Mo. Mid-Continent Office: 1023 Kennedy Building, Tulsa, Oklahoma. Mid-Continent Distributors: Frick-Reid Supply Co. Eastern Distributors: Frick & Lindsay Co. Casper, Wyoming, Office: With Frick-Reid Supply Co. New York City Office: 30 Church Street.

GASOLINE AND NAPHTHA—
Oklahoma (Group 3):
50-52 450 end point
56-58 450 end point
58-60 437 end point (U. S. Motor)
60-62 400 end point
64-66 375 end point
68-70 360 end point
Kansas:
58-60 437 end point (U. S. Motor)
North Texas:
50-52 450 end point
58-60 437 end point (U. S. Motor)
64-66 390 end point
Pennsylvania:
52 Naphtha
58 Gasoline
60 Gasoline
64 Gasoline
68-70 Gasoline
California:
54-56 (U. S. Motor) domestic
NATURAL GASOLINE—
Oklahoma (Group 3):
Grade A, 72-78, under 375 end point
Grade B, 76-82 375 end point
Grade C, 80-88 350 end point
North Texas:
Grade A, 72-78, under 375 end point
Grade B, 76-82 375 end point
Grade C, 80-88 350 end point
California:
78-85 absorption, 360-390 end point
78-84 compression, 350 end point
BLENDS—
Oklahoma (Group 3):
60-62 450 end point
68-70 430-435 end point
BURNING OILS—
Oklahoma (Group 3):
41-43 water white Kerosene
42-44 water white Kerosene
Kansas:
41-43 water white Kerosene
North Texas:
41-43 water white Kerosene
Pennsylvania:
43 Kerosene prime white
45 Kerosene water white
California:
40-42 Kerosene water white
43-45 445 Engine Distillate
FUEL OILS—
20-24 (El Dorado, Ark.), per bbl.
Kansas:
24-26 Fuel Oil, bbl.
38-40 Distillate
Oklahoma (Group 3):
24-26 Fuel Oil, bbl.
32-36 Gas Oil
38-40 Straw Distillate
North Texas:
24-26 Fuel Oil
32-36 Gas Oil
38-40 Straw Distillate
North Louisiana:
18-20 Fuel Oil
Gulf Coast:
Gas Oil
Fuel Oil, bbl.
Pennsylvania:
30-34 Fuel Oil
36-40 Fuel Oil
California:
27-33 Distillate
15-20 Fuel Oil (tide water)
LUBRICATING OILS AND WAX—
Oklahoma (Group 3):
100 vis., 3 color, 20-25 cold test
180 vis., 3 color, 23-28 cold test
200 vis., 3 color, 23-28 cold test
180 vis., 5 color, 23-28 cold test
200 vis., 5 color, 23-28 cold test
240 vis., 5 color, 23-28 cold test
200-210 "E" Bright Stock
190-200 S. R. green, 40-50 cold test
124-126 Wax, lb.
Pennsylvania:
600 Pennsylvania Flash
Pennsylvania Bright Stock
Gulf Coast:
200 vis., 3 color, pale
200 vis., 5 color, red oil
California:
200 vis., 2½-3 color
200 vis., 4½-5 color, red
NEW YORK DOMESTIC MARKET—
U. S. Motor Gasoline, 58-60, 437 end point
*Bunker Oil, 14-16 Be., bbl.
Diesel Oil, 28-30 Be., bbl.
Furnace Oil, New York City
*Lighterage, 6.5c a barrel extra.
NEW YORK EXPORT MARKET—
58-60 Gasoline, in cases
Standard white Kerosene, 40-42, in cases
Water white, 42-44, in cases
LUBRICATING OIL—
Cylinder, extra light filtered, bbls.
120-122, a.m.p. Wax, lb.
LOS ANGELES EXPORT MARKET—
Kerosene water white
U. S. Motor Gasoline, 54-56, 437 end point

*PRAIRIE OIL & GAS CO.

	January			February		
	1	22	30	6	12	17
Below 30	.75	1.00	1.15	....	1.35	....
30 to 32.9	.90	1.15	1.35	....	1.55	....
33 to 35.9	1.10	1.35	1.55	....	1.80	....
36 to 38.9	1.25	1.50	1.70	....	1.95	2.00
39 to 41.9	1.25	1.60	1.85	....	2.10	2.25
42 and above	1.25	1.60	1.95	2.00	2.35	....

*Prices posted by the Sinclair Crude Oil Purchasing Co. of the Prairie Oil & Gas Co. except the two highest gravities 10 which were 39 to 41.5 degrees instead of 39 to 41.9 de and above instead of 42 degrees and above.

THE

	January				February	
	1	22	30	31	6	
Below 30	.75	1.60	1.15	....	....	1
30 to 32.9	.90	1.15	1.35	....	....	1
33 to 35.9	1.10	1.35	1.55	....	....	1
36 to 38.9	1.25	1.50	1.70	....	....	2
39 to 41.9	1.25	1.60	1.85	....	....	2
42 and above	1.25	1.60	1.95	....	2.00	2
Currie	1.25	1.50	1.80	....	....	2
Powell	1.25	1.50	1.80	....	....	2
Mexia	1.25	1.50	1.70	1.80	....	2
Wortham	1.25	1.50	1.70	1.80	....	2

L AND GAS JOURNAL'S TABLE FOR 1925 GIVING LOW WEEKLY QUOTATIONS OF REPRESENTATIVE

	January				February				March					April				
	6	13	20	27	3	10	17	24	3	10	17	24	31	7	14	21	28	
	.07¼	.07½	.07½	.08	.10	.11¼	.12½	.12¼	.11¼	.11¼	.10½	.09¾	.09¾	.09¼	.09½	.10	.09¾	.
	.07½	.07¾	.08	.09¼	.10½	.11½	.13	.12¾	.11¾	.11½	.10¾	.10	.10	.09½	.09¾	.10	.09¾	.
	.07¾	.08	.08¾	.09¾	.11	.12	.13¼	.13	.12	.11⅞	.10¾	.10¼	.10¼	.09¾	.09¾	.10½	.10¼	.
	.09	.09½	.09¾	.11	.12½	.13½	.14¾	.14½	.13¾	.13¼	.13	.12	.11½	.11½	.11	.11½	.11½	.
	.10½	.10¾	.11½	.12¾	.14½	.15	.16	.15¾	.15	.13¾	.14	.13	.12¾	.12¼	.12	.12¾	.12¾	.
	.11¼	.11½	.12¼	.13¼	.15	.15¼	.16¼	.16¼	.15½	.15¼	.14¼	.13½	.13¼	.13	.12¾	.13¼	.13	.
	.08	.08	.08½	.09¾	.11¼	.12¼	.13½	.13¼	.12½	.12	.11	.10¼	.10¼	.10	.10	.10½	.10¼	.
	.07¼	.07½	.07½	.07¾	.09¾	.11¼	.12½	.12¼	.11¼	.11¼	.10½	.10	.10	.09¼	.09¼	.10	.09¾	.
	.08	.08	.08½	.10	.11¼	.12¼	.13½	.13	.12	.12	.10¾	.10	.10	.09¾	.09¾	.10¼	.10¼	.
	.10	.10½	.11¼	.12¾	.14¼	.14¾	.15¾	.15½	.15	.14¾	.13¾	.12½	.12½	.12¼	.11¾	.12½	.12½	.
	.10¾	.10¼	.10½	.11	.12	.13½	.14½	.14½	.14¼	.14	.14½	.13	.12¾	.12¾	.12¾	.12¾	.12¾	.
	.11	.10¾	.10¾	.12	.13½	.14¾	.15¾	.15¾	.15	.14¾	.14¼	.13½	.13¼	.13¼	.13¼	.13	.13	.
	.12¼	.12	.12	.12½	.14	.15¼	.16¼	.16¼	.15½	.15¼	.15	.14½	.14	.14	.14	.13¾	.14	.
	.14½	.14½	.15	.15	.15½	.16	.17	.17	.16½	.16¼	.16	.15¾	.15	.15	.15	.15	.15	.
	.17	.16½	.16½	.16½	.18	.18¾	.19	.19	.18½	.18½	.18½	.16½	.18	.18	.18	.18	.17¼	.
	.09	.09	.09	.09	.09	.11	.11	.11	.11	.11	.11	.10	.11	.11	.11	.11	.11	.
	.09	.09¼	.09	.09½	.10½	.11½	.13	.13¼	.12¼	.11¼	.10½	.09¾	.09½	.09	.09	.10	.10	.
	.08¼	.08½	.08½	.09	.10	.11	.12¼	.12¼	.11¼	.10¼	.09¾	.08¾	.08¼	.08	.08	.09	.09¾	.
	.07¾	.07¾	.07¾	.08½	.09½	.10¾	.11½	.11½	.10½	.09¾	.09	.08	.07¼	.07	.07	.08¼	.09¼	.
	.08¾	.09	.09	.09½	.10¼	.11¾	.13	.13	.12	.11¼	.10¼	.09¼	.09¼	.09	.09	.10	.10	.
	.08¼	.08¼	.08½	.08¾	.09¾	.11	.12¼	.12	.11	.10¼	.09¾	.08½	.08	.08	.08	.09	.09¾	.
	.07¾	.07¾	.08	.08½	.09¼	.10½	.11½	.11½	.10½	.09¾	.09	.08	.07¼	.07	.07	.08¼	.09¼	.
	.11½	.11½	.11½	.11	.11	.13½	.13½	.13½	.13½	.13	.13	.12½	.13	.13	.13	.13½	.13½	.
	.11½	.11½	.11½	.11½	.11½	.13¾	.13¾	.13¾	.13¾	.13½	.13½	.12½	.13½	.13½	.13½	.13	.13½	.
	.07¾	.08	.08¼	.09	.10½	.11¾	.12¾	.12¾	.11¾	.11½	.10½	.10	.10	.09¾	.09½	.10	.10	.
	.08	.08¼	.08½	.09¼	.10½	.11¾	.13	.13	.11¾	.11¼	.10½	.10	.10	.09¾	.09¼	.10	.10	.
	.04¼	.04⅜	.04⅜	.04⅜	.04⅜	.04½	.04¾	.04¾	.04¾	.04⅝	.04½	.04¼	.04⅛	.04	.04	.04	.04	.
	.04½	.04⅝	.04⅝	.04½	.04½	.04⅝	.05	.05¼	.05	.05	.04¾	.04½	.04⅝	.04¼	.04¼	.04¼	.04¼	.
	.04⅜	.04½	.04½	.04½	.04½	.04¾	.05½	.05½	.05¼	.05¼	.05	.04¾	.04½	.04¼	.04¼	.04¼	.04¼	.
	.04¼	.04⅜	.04¼	.04¼	.04⅜	.04⅜	.04¾	.04¾	.04¾	.04⅝	.04½	.04¼	.04¼	.04	.04	.04	.04	.
	.07	.07	.07	.07	.07¼	.07¼	.07½	.07½	.07½	.07¼	.07⅛	.07	.06⅝	.06⅝	.06⅝	.06⅝	.06⅝	.
	.07½	.07¼	.07¼	.07¼	.07½	.07½	.07¾	.07¾	.07⅝	.07½	.07⅜	.06¾	.06¾	.06¾	.06¾	.06½	.06½	.
	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.
	.06	.06	.06	.06	.06	.08½	.08½	.08½	.08½	.08½	.08½	.08	.08½	.08½	.08½	.08½	.08½	.
	1.20	1.25	1.25	1.30	1.30	1.30	1.30	1.30	1.30	1.25	1.15	1.10	1.10	1.10	1.05	1.00	.90	.
	1.40	1.40	1.45	1.45	1.45	1.50	1.45	1.45	1.40	1.40	1.30	1.25	1.20	1.20	1.15	1.10	1.02½	.
	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04	.04	.03⅞	.03⅞	.03¾	.03⅝	.03½	.03½	.03½	.03½	.03½	.
	1.25	1.27½	1.30	1.30	1.30	1.30	1.27½	1.25	1.20	1.20	1.15	1.10	1.10	1.10	1.05	1.02½	.95	.
	.03⅝	.03⅝	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03½	.03½	.03⅝	.03¼	.03⅛	.03	.03	.02⅞	.02¾	.
	.04	.04	.04	.04	.04	.04	.04	.03⅞	.03¾	.03¾	.03⅝	.03½	.03⅜	.03¼	.03¼	.03¼	.03⅛	.
	1.25	1.27½	1.30	1.30	1.40	1.40	1.40	1.40	1.35	1.35	1.25	1.15	1.15	1.15	1.15	1.10	1.02½	.
	.03¾	.03⅝	.03¾	.03⅝	.03¾	.03¾	.03¾	.03¾	.03⅝	.03⅝	.03½	.03¼	.03¼	.03⅛	.03	.02⅞	.02¾	.
	.03⅞	.04	.04	.04	.04	.04	.04	.04	.03⅞	.03⅞	.03¾	.03¾	.03½	.03⅜	.03⅜	.03¼	.03¼	.
	1.20	1.30	1.30	1.30	1.30	1.40	1.30	1.30	1.25	1.25	1.20	1.20	1.20	1.10	1.10	1.00	.90	.
	.04½	.04½	.04½	.04½	.04½	.04½	.05	.05	.05	.05	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.
	1.65	1.65	1.65	1.65	1.65	1.65	1.70	1.70	1.70	1.70	1.65	1.65	1.65	1.65	1.65	1.60	1.55	1.45
	.06	.06	.06¼	.06¼	.06¼	.06¼	.06¼	.03¼	.06¼	.05⅞	.05⅞	.05½	.05	.04¼	.04¼	.04¼	.04¼	.
	.06½	.06½	.06½	.06½	.07	.07	.07	.07	.07	.06½	.06½	.06	.06	.05½	.05½	.05½	.05½	.
	.03¾	.03¾	.03¾	.03¾	.03¾	.04½	.04½	.04½	.04½	.04½	.04	.04	.04	.04	.04	.04	.04	.
	1.40	1.40	1.40	1.40	1.40	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	.04	.04	.04	.04	.07	.07	.07	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.
	.08½	.08½	.08½	.08½	.09¼	.09¼	.09¼	.10¼	.11	.11	.11	.11	.11	.11	.11	.11	.11	.
	.10	.10	.10	.10	.10¾	.10¾	.10¾	.11¾	.12	.12	.12	.12	.12	.12	.12	.12	.12	.
	.07½	.07½	.07½	.07½	.08¾	.08¾	.08¾	.09¾	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.
	.09	.09	.09	.09	.10¼	.10¼	.10¼	.11¼	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.
	.12	.12	.12	.12	.13½	.13½	.13½	.14½	.15	.15	.15	.15	.15	.15	.15	.15	.15	.
	.29	.29	.29	.29	.30	.30	.30	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.
	.06½	.06½	.06½	.07½	.07½	.07½	.10	.10	.10	.10	.10	.09½	.09½	.08½	.08½	.08½	.08½	.
	.05	.05⅛	.05⅛	.05⅛	.05¼	.05¼	.05¼	.05⅛	.05	.05	.05	.05	.05	.05	.05	.05	.05	.
	.34	.34	.34	.35	.35	.35	.35	.35	.35	.39½	.34	.34	.33	.33	.29	.29	.29	.29
	.40½	.38¾	.41	.41	.41	.40	.40½	.40½	.40½	.40½	.39	.39	.37½	.37½	.37½	.37½	.37	.36
	.13	.13	.13	.13	.13	.14	.15	.15	.15	.15	.15	.15	.15	.15	.14	.14	.14	.14
	.11½	.11½	.11½	.11½	.11½	.12½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.12½	.12½	.12½	.12
	.15	.14½	.14½	.14½	.14½	.14½	.14½	.14½	.14½	.14½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15
	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.14	.14	.14	.14	.14	.14	.14	.14
	.13¼	.13	.13	.13	.14	.17	.16	.16	.16	.18	.18	.17	.15	.15	.14	.15	.15	.15
	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.75
	2.10	2.10	2.10	2.10	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.35	2.35	2.35	2.30	2.30
	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
	.26.65	.26.65	.26.65	.28.15	.29.15	.29.15	.30.15	.30.15	.30.15	.30.15	.30.15	.30.15	.29.15	.29.15	.29.15	.29.15	.29.15	.29.
	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9
	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.
	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.45	.45	.45	.
	.06⅞	.06⅞	.06⅞	.06⅞	.06⅞	.06⅞	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06
	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05½	.05½	.05
	.08½	.08½	.08½	.08½	.08½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10 ½	.10½	.10½	.10½	.10

THE OIL AND GAS JOURNAL'S TABLE FOR 19

OKLAHOMA, KANSAS, NORTH CENTRAL TEXAS AND EAST CENTRAL TEXAS

& GAS CO.

ebruary—			July	Aug.
12	17		10	27
1.35	....	28 to 28.9	1.40	1.15
1.55	....	29 to 29.9	1.48	1.23
1.80	....	30 to 30.9	1.56	1.31
1.95	2.00	31 to 31.9	1.64	1.39
2.10	2.25	32 to 32.9	1.72	1.47
2.35	....	33 to 33.9	1.80	1.55
		34 to 34.9	1.88	1.63
		35 to 35.9	1.96	1.71
		36 to 36.9	2.04	1.79
		37 to 37.9	2.12	1.87
		38 to 38.9	2.20	1.95
		39 to 39.9	2.28	2.03
		40 to 40.9	2.36	2.11
		41 to 41.9	2.44	2.19
		42 to 42.9	2.52	2.27
		43 to 43.9	2.60	2.35
		44 & above	2.68	2.43

urchasing Co. were the same as those
ghest gravities from January 1 to July
39 to 41.9 degrees, and 41.6 degrees

	January				February						June		July
	1		23	30	31	2	6		13	17	1		*11
Below 30	.75	Below 28	.75	.90	....	....	....		1.00	....	....	Below 28	....
30 to 32.9	.90	28 to 30.9	1.00	1.15	....	....	....		1.35	....	....	28 to 30.9	....
33 and above	1.25	31 to 32.9	1.15	1.35	....	....	....		1.55	....	....	28 to 28.9	....
	....	33 to 35.9	1.35	1.55	....	....	....		1.80	....	....	29 to 29.9	....
								⎧ Texas	2.00	....	....		
	....	36 to 38.9	1.50	1.70	....	....	....	⎩ Ok.-Kan.	1.95	2.00	....	30 to 30.9	....
	....	39 and above	1.60	....	....	....	....					31 to 31.9	1.64
								⎧ Texas	2.25	....	....		
	....	39 to 41.9	....	1.85	....	....	....	⎩ Ok.-Kan.	2.10	2.25	....	32 to 32.9	1.75
	....	42 and above	....	1.95	....	....	....		2.35	....	....	33 to 33.9	1.80
Corsicana light.	1.25	.....	1.50	....	1.80	....	....		2.00	....	....	34 to 34.9	1.88
Lytton Springs.	...	.....	....	....	....	....	....		....	....	2.00	35 to 35.9	1.96
Mexia-Wortham	1.50	.....	1.50	....	1.70	....	1.80		2.00	....	....	36 to 36.9	2.04
												37 to 37.9	2.12
												38 to 38.9	2.20
												39 to 39.9	2.28
												40 to 40.9	2.36
												41 to 41.9	2.44
												42 to 42.9	2.52
												43 to 43.9	2.60
												44 and above	2.68
Corsicana heavy	.90	.....	....	....	....	1.00	....		....	....	....		....

MAGNOLIA PETROLEUM CO.

*Oklahoma and Kansas only. Same schedule and prices adopted for Mexia-Wortham, Corsicana light and Lytton Springs, Texas, crudes July
†Texas crudes only. Same prices established in Oklahoma and Kansas August 26.
‡Oklahoma and Kansas only. Same schedule and prices established in Texas November 23, including revision of the 28 to 30.9 degrees grade
also. Thrall, Texas, crude posted $1.00 entire year by Magnolia Petroleum Co.

THE TEXAS CO.

—February—			June		July	Aug.	*Sept.
6	12		6		10	21	1
....	1.35		....	28 to 28.9	1.40	1.35	1.15
....	1.55		....	29 to 29.9	1.48	1.41	1.23
....	1.80		....	30 to 30.9	1.56	1.47	1.31
....	2.00		....	31 to 31.9	1.64	1.53	1.39
....	2.25		....	32 to 32.9	1.72	1.59	1.47
2.00	2.35		....	33 to 33.9	1.80	1.65	1.55
....	2.00	⎧ Below 42	2.00	34 to 34.9	1.88	1.71	1.63
....	2.00	⎩ 42 & above	2.25	35 to 35.9	1.96	1.77	1.71
....	2.00			36 to 36.9	2.04	1.82	1.79
....	2.00			37 to 37.9	2.12	1.89	1.87
				38 to 38.9	2.20	1.95	....
				39 to 39.9	2.28	2.01	2.03
				40 to 40.9	2.36	2.07	2.11
				41 to 41.9	2.44	2.13	2.19

HUMBLE OIL AND REFINING CO.

	January			—February—		June	
	1	23	30	5	12	1	
Below 30	.75	1.00	1.15	....	1.35	....	Below 28
30 to 32.9	.90	1.15	1.35	....	1.55	....	28 to 28.9
33 to 35.9	1.10	1.35	1.55	....	1.80	....	29 to 29.9
36 to 38.9	1.25	1.50	1.70	....	2.00	....	30 to 30.9
39 to 41.9	1.25	1.60	1.85	....	2.25	....	31 to 31.9
42 and above	1.25	1.60	1.95	....	2.35	....	32 to 32.9
Lytton Springs	....	....	....	....	....	2.00	33 to 33.9
Powell, Currie, Richland	1.25	1.50	1.80	....	2.00	....	34 to 34.9
Mexia-Wortham	1.25	1.50	1.70	1.80	2.00	....	35 to 35.9
Moran, Below 30	.75	1.00	1.15	....	1.35	....	36 to 36.9
30 to 32.9	.90	1.15	1.35	....	1.55	....	37 to 37.9
33 to 35.9	1.10	1.35	1.55	....	1.80	....	38 to 38.9
36 and above	1.25	1.50	1.70	....	1.80	....	39 to 39.9

EKLY QUOTATIONS OF REPRESENTATIVE REFINED PRODUCTS FOR EXPORT AND DOMESTIC MOVEM

	March					April				May				June					July					
	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28	4	
¼	.11¼	.11¼	.10½	.09¾	.09¾	.09¼	.09¼	.10	.09¾	.09¾	.10½	.10¾	.11	.12	.13	.12	.12	.12	.11¼	.12	.11½	.11¼	.10¾	
¾	.11¾	.11½	.10¾	.10	.10	.09½	.09¼	.10	.09¾	.10	.10¾	.11	.11½	.12¼	.12½	.12½	.12½	.12¾	.12	.12½	.12¼	.11¾	.11	
	.12	.11¾	.10¾	.10¼	.10¼	.09¾	.09¾	.10½	.10¼	.10¼	.11	.11½	.12	.12¾	.13	.13	.13	.12¾	.12½	.12¾	.12½	.12¼	.11½	
½	.13¾	.13¼	.13	.12	.11½	.11½	.11	.11½	.11½	.11½	.12¼	.12¾	.13½	.14¼	.14¼	.14¼	.14¼	.14	.13¾	.14	.14	.13½	.13	
¾	.15	.13¾	.14	.13	.12¾	.12¼	.12	.12¾	.12¾	.12¾	.13¼	.14	.14¼	.15	.15¼	.15¼	.15½	.15¼	.15	.15	.14¾	.14½	.14	
¼	.15½	.15¼	.14¼	.13½	.13¼	.13	.12¾	.13¼	.13	.13	.13½	.14½	.14¾	.15½	.15½	.15½	.15¾	.15½	.15½	.15½	.15½	.15½	.15¼	
¼	.12½	.12	.11	.10¼	.10¼	.10	.10	.10½	.10¼	.10½	.11¼	.11½	.12½	.13	.13¼	.13	.13	.13	.12½	.13	.12¾	.12½	.12	
¼	.11¼	.11¼	.10½	.10	.10	.09¼	.09¼	.10	.09¾	.09¾	.10½	.10¾	.11	.12	.12	.12	.12	.12	.11¼	.12	.11½	.11½	.10¾	
	.12	.12	.10¾	.10	.10	.09¾	.09¾	.10¼	.10¼	.10¼	.11	.11½	.12¼	.12¾	.13	.13	.13	.12¾	.12½	.13	.12½	.12¼	.11½	
½	.15	.14¾	.13¾	.12½	.12½	.12¼	.11¾	.12½	.12½	.12¼	.13	.14¼	.14¼	.14¾	.15	.15	.15¼	.15	.14¾	.15¼	.14¾	.14¼	.14	
½	.14¼	.14	.14½	.13	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾	.12¾	.13	.13½	.14¼	.15⅜	.15½	.15½	.14½	.14½	.14½	.14½	.14½	.14½	
¾	.15	.14¾	.14¼	.13½	.13¼	.13¼	.13¼	.13	.13	.13	.13	.13¾	.14⅜	.15½	.16¼	.16¼	.16	.15½	.15½	.15½	.15½	.15¼	.15¼	
¼	.15½	.15¼	.15	.14½	.14	.14	.14	.13¾	.14	.14	.14	.14¾	.15¼	.16	.16½	.17	.17	.16	.16	.16	.16	.16	.16	
	.16½	.16¼	.16	.15¾	.15	.15	.15	.15	.15	.15	.15	.15¼	.16¼	.17	.17¼	.17½	.17½	.17½	.17¼	.17¼	.17¼	.17¼	.17¼	
	.18½	.18½	.18½	.16½	.18	.18	.18	.18	.17¼	.17¼	.17¼	.17¼	.17¼	.19½	.20	.21¼	.20¾	.20¼	.20¼	.20	.20	.20	.20	
	.11	.11	.11	.10	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	
¼	.12¼	.11¼	.10½	.09¾	.09½	.09	.09	.10	.10	.10¼	.11	.12¾	.14	.14½	.15½	.15½	.15½	.15¼	.14¾	.14½	.14½	.14	.13½	
¼	.11¼	.10¼	.09¾	.08¾	.08¼	.08	.08	.09	.09¾	.09¾	.11	.12¾	.14	.14½	.15½	.15½	.15½	.15¼	.14¾	.14½	.14½	.14	.13½	
½	.10½	.09¾	.09	.08	.07¼	.07	.07	.08¼	.09¼	.09¾	.11	.12¾	.14	.14½	.15½	.15½	.15½	.15¼	.14¾	.14½	.14½	.14	.13½	
	.12	.11¼	.10¼	.09¼	.09¼	.09	.09	.10	.10	.10¼	.11	.12¾	.14	.14½	.15½	.15½	.15¾	.15¼	.14¾	.14½	.14¼	.14	.13¾	
	.11	.10¼	.09¾	.08½	.08	.08	.08	.09	.09¾	.09¾	.11	.12¾	.14	.14½	.15½	.15½	.15¾	.15¼	.14¾	.14½	.14¼	.14	.13¾	
½	.10½	.09¾	.09	.08	.07¼	.07	.07	.08¼	.09¼	.09¾	.11	.12¾	.14	.14½	.15½	.15½	.15¾	.15¼	.14¾	.14½	.14¼	.14	.13¾	
½	.13½	.13	.13	.12½	.13	.13	.13	.13½	.13½	.13½	.12½	.12½	.13	.13	.13	.14	.13¼	.13¼	.13¼	.13¼	.13¼	.13¼	.13¼	
¾	.13¾	.13½	.13½	.12½	.13½	.13½	.13½	.13	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	
¾	.11¾	.11¼	.10½	.10	.10	.09¾	.09¼	.10	.10	.10	.10¾	.11¼	.11⅜	.12½	.12¾	.12½	.12 ¾	.12¾	.12¾	.12½	.12¼	.12	.12	
	.11¾	.11¼	.10½	.10	.10	.09¾	.09¼	.10	.10	.10	.10¾	.11¼	.11⅜	.12½	.12¾	.12½	.13	.13	.12¾	.13	.13	.13	.12¾	
¾	.04¾	.04⅝	.04½	.04¼	.04⅜	.04	.04	.04	.04	.04⅛	.04½	.04⅜	.04¼	.04¼	.04¼	.04⅛	.04⅛	.04	.03⅞	.03⅞	.03⅞	.04	.04	
¼	.05	.05	.04¾	.04½	.04⅝	.04¼	.04¼	.04¼	.04¼	.04⅝	.04½	.04⅜	.04⅝	.04⅝	.04⅝	.04½	.04½	.04⅜	.04¼	.04¼	.04¼	.04¼	.04¼	
½	.05¼	.05¼	.05	.04¾	.04½	.04¼	.04¼	.04¼	.04¼	.04⅜	.04⅜	.04⅜	.04⅝	.04⅝	.04⅝	.04½	.04½	.04¼	.04¼	.04 ¼	.04¼	.04¼	.04¼	
¾	.04¾	.04⅝	.04½	.04¼	.04¼	.04	.04	.04	.04	.04	.04⅛	.04	.04¼	.04¼	.04½	.04¼	.04⅛	.04⅛	.04	.04	.04	.04	.03⅞	
½	.07½	.07¼	.07⅛	.07	.06⅝	.06⅝	.06⅝	.06⅝	.06⅝	.06⅜	.06⅜	.06⅜	.06⅜	.06⅜	.06⅜	.06¼	.06¼	.06¼	.06½	.06	.06	.06	.06	
¾	.07⅜	.07½	.07⅝	.07⅛	.06¾	.06¾	.06¾	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	
½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	
½	.08½	.08½	.08½	.08	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	
	1.30	1.25	1.15	1.10	1.10	1.10	1.05	1.00	.90	.90	.90	.90	.95	.95	.95	.90	.90	.90	.90	.90	.90	1.00	1.00	1.1
	1.40	1.40	1.30	1.25	1.20	1.20	1.15	1.10	1.02½	.95	.90	.92½	.95	.95	.95	.95	.95	.90	.90	.90	.95	1.00	1.10	1.1
	.03⅞	.03⅞	.03¾	.03⅝	.03½	.03½	.03½	.03½	.03½	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03¼	.03⅜	.03½	.03½	
	1.20	1.20	1.15	1.10	1.10	1.10	1.05	1.02½	.95	.90	.90	.90	.95	.95	.95	.92 ½	.90	.87½	.85	.87½	.92½	1.00	1.07½	1.0
¾	.03½	.03½	.03⅜	.03¼	.03⅛	.03	.03	.02⅞	.02¾	.03¾	.02⅞	.02⅞	.03	.03⅛	.03⅛	.03	.03	.03	.02⅞	.02⅞	.02⅞	.03⅛	.03⅛	
⅞	.03¾	.03¾	.03⅝	.03½	.03⅜	.03¼	.03¼	.03⅛	.03	.03	.03	.03	.03⅛	.03⅜	.03¼	.03¼	.03¼	.03⅜	.03⅛	.03⅛	.03¼	.03½	.03½	
	1.35	1.35	1.25	1.15	1.15	1.15	1.15	1.10	1.02½	.95	.90	.90	.95	.95	.95	.95	.95	.92½	.92½	.92½	.95	1.00	1.10	1.1
¾	.03⅝	.03⅝	.03½	.03¼	.03¼	.03⅛	.03⅜	.03	.02⅞	.02¾	.02¾	.02¾	.03	.03½	.03⅛	.03	.03	.03	.02⅞	.02¾	.02¾	.03⅛	.03¼	
¼	.03⅞	.03⅞	.03¾	.03¾	.03½	.03⅜	.03⅜	.03¼	.03¼	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03	.03⅛	.03⅛	.03¼	.03½	.03½	
	1.25	1.25	1.20	1.20	1.20	1.10	1.10	1.00	.90	.90	.90	.95	1.00	1.00	1.05	1.00	1.00	.95	1.00	1.00	1.00	1.05	1.05	1.0
	.05	.05	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.05	.05	.05	.05	.05¼	.05¼	.05¼	.05¼	.05¼	.05	
	1.70	1.70	1.65	1.65	1.65	1.65	1.65	1.60	1.55	1.45	1.45	1.45	1.45	1.55	1.55	1.55	1.55	1.55	1.55	1.50	1.50	1.50	1.50	1.4
¼	.06¼	.05⅞	.05⅞	.05½	.05	.04¼	.04¼	.04¼	.04½	.04¼	.04½	.04½	.04½	.04½	.05½	.05¼	.05¼	.05	.05	.05	.05	.05½	.05½	
	.07	.06½	.06½	.06	.06	.05½	.05½	.05½	.05½	.05½	.05⅝	.05⅝	.05⅝	.05¾	.06¼	.06¼	.06¼	.06	.06	.06	.06	.06	.06	
½	.04½	.04½	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	
	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.5
	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.07	.06	.06	.06	.06	.06	.06	.05¾	.05¾	
¼	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	
¾	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	
¾	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	
¼	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	
½	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	
1	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	
0	.10	.10	.10	.09½	.09½	.08½	.08½	.08½	.08½	.08½	.08½	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	
⅛	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05¼	.05¼	.05¼	.05¼	.05	.05	.05	.05	.05	
	.35	.39½	.34	.34	.33	.33	.29	.29	.29	.29	.29	.29	.31	.29	.30	.30	.29	.29	.29	.29	.28	.29	.29	
½	.40½	.40½	.39	.39	.37½	.37½	.37½	.37½	.37	.36½	.37½	.37	.37	.38½	.39½	.39½	.38	.38	.39	.39	.39	.39	.39	
	.15	.15	.15	.15	.15	.15	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.13½	.13½	.14	.13½	
½	.13½	.13½	.13½	.13½	.13½	.13½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12	.12	.12½	.11½	
½	.14½	.14½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	
3	.13	.13	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	
6	.16	.18	.18	.17	.15	.15	.14	.15	.15	.15	.15	.16	.16	.16½	.16½	.16½	.16½	.16½	.16½	.16½	.16½	.16½	.16½	
0	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.6
0	2.70	2.70	2.70	2.70	2.70	2.35	2.35	2.35	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.1
0	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	
0.15	.30.15	.30.15	.30.15	.30.15	.30.15	.29.15	.29.15	.29.15	.29.15	.29.15	.29.15	.29.15	.29.15	.30.65	.30.65	.30.65	.30.65	.30.65	.30.65	.30.65	.30.65	.30.65	.30.65	.3
6.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.9	.16.4	.16.4	.16.4	.16.4	.16.4	.16.4	.16.4	.16.4	.16.4	.16.4	.1
7.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.9	.17.4	.17.4	.17.4	.17.4	.17.4	.17.4	.17.4	.17.4	.17.4	.17.4	.1
½	.46½	.46½	.46½	.46½	.46½	.46½	.46½	.45	.45	.45	.45	.45	.45	.37	.37	.37	.37	.37	.37	.36	.36	.36	.36	.3
¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.05⅞	.05⅞	.05⅞	.06	.06	.06	.06	.06	.06	.06	.06⅛	.0	
⅛	.05	.05	.05	.05	.05	.05	.05	.05	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.0
½	.10½	.10½	.10½	.10½	.10½	.10 ½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10¾	.10¾	.10¾	.10⅞	.10¾	.10¾	.10¾	.1

THE OIL AND GAS JOURNAL'S TABLE FOR 1925 SHOWING DATE AND AMOUNT OF CHANGES IN CRUDE

EAST CENTRAL TEXAS

MAGNOLIA PETROLEUM CO.

February					June		July	Aug.	Sept.	Nov.
13	17	1			*11	†18	‡1			23
1.00	....	....		Below 28	....	....	....			1.07
1.35	....	....		28 to 30.9	....	....	1.31			....
1.55	....	....		28 to 28.9	....	....	....			1.15
1.80	....	....		29 to 29.9	....	....	....			1.23
2.00	....	....	Texas							
1.95	2.00	....	Ok.-Kan.	30 to 30.9	....	....	....			1.31
				31 to 31.9	1.64	1.53	1.39			1.39
2.25	....	....	Texas							
2.10	2.25	....	Ok.-Kan.	32 to 32.9	1.75	1.59	1.47			1.47
2.35	....	....		33 to 33.9	1.80	1.65	1.55			1.55
2.00	....	....		34 to 34.9	1.88	1.71	1.63			1.63
....	....	2.00		35 to 35.9	1.96	1.77	1.71			1.71
2.00	....	....		36 to 36.9	2.04	1.83	1.79			1.79
				37 to 37.9	2.12	1.89	1.87			1.87
				38 to 38.9	2.20	1.95	....			....
				39 to 39.9	2.28	2.01	2.03			2.03
				40 to 40.9	2.36	2.07	2.11			2.11
				41 to 41.9	2.44	2.13	2.19			2.19
				42 to 42.9	2.52	2.19	2.27			2.27
				43 to 43.9	2.60	2.25	2.35			2.35
				44 and above	2.68	2.31	2.43			2.43
....	....	....			....	....	....			1.05

ices adopted for Mexia-Wortham, Corsicana light and Lytton Springs, Texas, crudes July 13.
homa and Kansas August 26.
ices established in Texas November 23, including revision of the 28 to 30.9 degrees grade in Oklahoma and Kansas
Magnolia Petroleum Co.

HUMBLE OIL AND REFINING CO.

January			February		June		July	Aug.	Nov.
1	23	30	5	12	1		10	15	21
.75	1.00	1.15	....	1.35	....	Below 28	....	....	1.07
.90	1.15	1.35	....	1.55	....	28 to 28.9	1.40	1.35	1.15
1.10	1.35	1.55	....	1.80	....	29 to 29.9	1.48	1.41	1.23
1.25	1.50	1.70	....	2.00	....	30 to 30.9	1.56	1.47	1.31
1.25	1.60	1.85	....	2.25	....	31 to 31.9	1.64	1.53	1.39
1.25	1.60	1.95	....	2.35	....	32 to 32.9	1.72	1.59	1.47
....	....	....	....	....	2.00	33 to 33.9	1.80	1.65	1.55
1.25	1.50	1.80	....	2.00	....	34 to 34.9	1.88	1.71	1.63
1.25	1.50	1.70	1.80	2.00	....	35 to 35.9	1.96	1.77	1.71
.75	1.00	1.15	....	1.35	....	36 to 36.9	2.04	1.83	1.79
.90	1.15	1.35	....	1.55	....	37 to 37.9	2.12	1.89	1.87
1.10	1.35	1.55	....	1.80	....	38 to 38.9	2.20	1.95	....
1.25	1.50	1.70	....	2.00	....	39 to 39.9	2.28	2.01	2.03
						40 to 40.9	2.36	2.07	2.11
						41 to 41.9	2.44	2.13	2.19

January			
1	20	23	
			Caddo—
1.00	....	1.2	Below 32
1.15	....	1.4	32 to 34.9
1.25	....	1.5	35 to 37.9
1.35	....	1.6	38 and above
			Homer—
.75	....	1.0	Below 31
.90	....	1.1	31 to 32.9
1.00	....	1.2	33 to 34.9
1.10	....	1.3	35 and above
			Haynesville—
.90	....	1.1	Below 33
1.00	....	1.2	33 and above
			El Dorado—
.90	....	1.1	Below 33
1.00	....	1.2	33 and above
			Bull Bayou—
.85	....	1.1	32 to 34.9
1.00	....	1.2	35 to 37.9
1.15	....	1.4	38 and above
.95	....	1.1	Cotton Valley
1.20	....	1.4	DeSoto
1.00	....	1.2	Crichton
1.35	....	1.5	Bellevue
			Smackover—
....	....	....	Below 24 (to storage)
....	....	....	Below 24
....	....	....	24 to 24.9
....	....	....	Below 25 (to storage)
.85	....	1.0	Below 25
.95	....	1.1	25 to 25.9
.95	1.05	1.2	26 to 26.9
.95	1.10	1.2	27 to 27.9
.95	1.15	1.3	28 and above

J	
1	19
	Stephens—
.70	Below 26
.90	26 and above
	Smackover—
	Below 23
....	23 to 23.9
....	Below 24
....	24 to 24.9
.85	Below 25
.95	25 to 25.9

38 to 38.9	2.20	1.95	....
39 to 39.9	2.28	2.01	2.03
40 to 40.9	2.36	2.07	2.11
41 to 41.9	2.44	2.13	2.19

30 to 32.9	.90	1.15	1.35	....	1.55	....	37 to 37.9
33 to 35.9	1.10	1.35	1.55	....	1.80	....	38 to 38.9
36 and above	1.25	1.50	1.70	....			

MOVEMENT. INCLUDES AVERAGE PRICES FOR THE YEARS 1925, 1924 AND 1923. PRICES GIVEN IN CENTS PER GA

August				September					October				November				December					1925			AVERA
4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	Av. Prc. for Year	High	Low	Av. 1st
.10¾	.10¼	.09½	.09	.08	.07¾	.08¼	.09	.08¾	.08½	.08	.07¾	.08¼	.08	.08¼	.08¼	.08½	.09	.09	.09	.08¾	.09	.09.77	.12½	.07¼	.10
.11	.10⅞	.09¾	.09	.08	.07⅞	.08¾	.09½	.09	.08½	.08¼	.08	.08½	.08½	.08¾	.09½	.09½	.09½	.09½	.09½	.09¼	.09¼	.10.12	.13	.07½	.10
.11½	.11¼	.10¼	.09¼	.08½	.08¼	.09	.10	.09¾	.09¼	.08½	.08¼	.09	.09	.09½	.10	.10	.10¼	.10¼	.09¾	.09½	.09½	.10.55	.13¾	.07¾	.11
.13	.12½	.11¾	.10½	.10¼	.10	.10½	.11	.11	.10¾	.10¼	.10¼	.10¾	.11	.11¼	.11½	.11½	.11¾	.11¾	.11¾	.11	.11	.11.76	.14¾	.09	.12
.14	.13½	.12½	.11½	.11¼	.11	.11½	.12	.11¾	.11⅝	.11½	.11½	.11¾	.12	.12¼	.12½	.12½	.12½	.12⅝	.12¼	.12	.13.10	.16	.11	.13
.15¼	.14¾	.14	.12½	.12	.11¾	.12½	.13	.13	.13	.12½	.12¾	.13	.13	.13¼	.13½	.13½	.13½	.13½	.13¼	.13	.13¼	.13.84	.16¼	.11¼	.13
.12	.11½	.10½	.09¾	.08¾	.08½	.09½	.10¼	.10	.09½	.09	.08½	.09	.09	.09½	.10	.10¼	.10½	.10¼	.10¼	.10	.10	.10.75	.13½	.08	.11
.10¾	.10½	.09½	.09	.08	.07¾	.08¼	.09	.08¾	.08½	.08	.07¾	.08¼	.08	.08¼	.08½	.08½	.09	.09	.09	.08⅝	.08⅝	.09.74	.12½	.07¼	.10
.11½	.10¾	.10¼	.09¼	.08½	.08⅜	.09	.10	.10¼	.09	.08¼	.08¼	.09¼	.09	.09¼	.09¾	.10	.10¼	.10¼	.09¾	.09½	.09½	.10.56	.13½	.08	.11
.14	.13¼	.12⅜	.11¼	.11	.10½	.11	.11½	.12	.11¼	.11¼	.11	.11½	.11¾	.12	.12¼	.12¼	.12¼	.12¼	.12¼	.11¾	.11¾	.12.89	.15¼	.10	.13
.14½	.14¼	.13¼	.12¾	.12¼	.12	.12	.12	.12	.11½	.11½	.11½	.11½	.11½	.11	.11	.11	.11	.11¼	.11¼	.11¼	.11¼	.12.76	.14½	.10¾	.13
.15¼	.14½	.14	.13¼	.12¾	.12½	.12¼	.12½	.12½	.12¼	.12¼	.12	.12	.12	.11¾	.11¾	.12	.12	.12½	.12½	.12⅝	.12⅝	.13.48	.15⅜	.10⅝	.13
.16	.15¼	.15¼	.14	.13⅜	.13½	.13¼	.13½	.13½	.13¼	.13¼	.13¼	.13¼	.13¼	.12¾	.12¾	.12¾	.12¾	.13½	.13½	.13½	.13½	.14.82	.16¼	.12	.14
.17¼	.17¼	.17¼	.16	.15½	.15¼	.15¼	.15½	.15½	.15½	.15½	.15¼	.15¼	.15¼	.15	.15	.15	.15	.15¼	.15¼	.15¼	.15¼	.15.84	.17¼	.14½	.15
.20	.20	.20	.19	.18½	.18½	.18½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.20	.20	.20	.20	.18.89	.20¼	.16½	.18
.11	.11	.11	.11	.11	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.11	.10.17	.11	.09	.10
.13½	.13	.12½	.11½	.11¾	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11½	.11½	.11½	.11¼	.11¼	.11¼	.10¾	.10¾	.10¾	.12.02	.15½	.09	.11
.13½	.13	.12¼	.11½	.11½	.11¼	.12	.13¼	.14¼	.14	.13¾	.12¾	.11¾	.11	.11	.10¼	.10¼	.10¼	.10¼	.10	.10	.10	.11.58	.15½	.08	.11
.13½	.13	.12¼	.11½	.11½	.11¼	.12	.13¼	.14¼	.14	.13¾	.12½	.11½	.10¼	.09¾	.09¼	.09	.09¼	.09½	.09½	.09½	.09½	.11.2	.15½	.07¾	.10
.13¾	.13¼	.12½	.11½	.11½	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11¾	.11½	.11½	.11¼	.11¼	.11¼	.11	.10¾	.10¾	.11.99	.15¾	.08¾	.11
.13¾	.13¼	.12½	.11½	.11½	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11¼	.11	.10¼	.10¼	.10¼	.10¼	.10¼	.10	.10	.11.58	.15¾	.08½	.10
.13¾	.13¼	.12½	.11½	.11½	.12½	.12	.13¼	.14¼	.14	.13¾	.12½	.11½	.10¼	.09½	.09¼	.09	.09¼	.09½	.09½	.09½	.09¾	.11.86	.15¾	.07¾	.10
.13¼	.13¼	.13¼	.13¼	.13	.11	.11	.11	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.13	.13	.13	.13	.13	.13	.15	.12.81	.15	.11	.12
.13½	.13½	.13½	.13½	.13½	.11½	.11½	.11½	.12¾	.12¾	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.15	.13.07	.15	.11½	.13
.12	.11½	.10¼	.09¼	.08½	.08¼	.08¾	.09¾	.09¾	.09	.08½	.08¼	.08¾	.08¾	.09	.09½	.09½	.09¾	.09¾	.09¾	.09½	.09½	.10.33	.12¾	.07¾	.10
.12¾	.12	.10½	.09½	.09½	.09¼	.10¼	.10¾	.10¾	.10½	.10¼	.10¼	.10¼	.10¼	.10½	.10¾	.11	.11	.10¾	.10½	.10½	.10½	.10.89	.13	.08	.10
.04	.04	.04⅛	.04¼	.04⅜	.04¾	.04⅞	.05¼	.05	.05	.05	.04¾	.04¾	.04¾	.04⅞	.05	.05	.05	.05	.05	.05	.05½	.04.45	.05⅛	.03⅞	.04
.04¼	.04½	.04½	.04¾	.05	.05¼	.05¼	.05½	.05¼	.05¼	.05¼	.05⅛	.05	.05⅛	.05¼	.05⅜	.05½	.05½	.05½	.05½	.05⅜	.05½	.04.79	.05½	.04¼	.04
.04¼	.04½	.04½	.04½	.04⅝	.04¾	.05	.05¼	.05¼	.05¼	.05¼	.05	.05	.05	.05½	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05½	.04.67	.05½	.04¼	.04
.03⅞	.03⅞	.04	.04⅛	.04¼	.04⅜	.04⅝	.05	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.05	.05	.05	.05⅛	.05⅜	.05⅜	.05⅜	.05¼	.04.45	.05⅜	.03⅞	.04
.06	.06	.06	.06	.06	.06	.06	.06	.06	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.07	.07	.07	.07¼	.07¼	.07¼	.07¼	.06.56	.07½	.06	.06
.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06½	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.07	.07¼	.07¼	.07½	.07½	.07½	.07½	.07½	.06.81	.07¾	.06¼	.06
.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07.5	.07½	.07½	.07
.08½	.08½	.08½	.08½	.07½	.07½	.07½	.07½	.07½	.07½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.07.74	.08½	.06½	.08
1.00	1.10	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.10	1.17½	1.20	1.20	1.25	1.25	1.25	1.25	1.08.99	1.30	.90	1.09
1.10	1.15	1.12½	1.15	1.10	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.25	1.30	1.30	1.30	1.40	1.40	1.35	1.18.12	1.50	.90	1.15
.03½	.03¾	.03⅞	.03¾	.03⅝	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.04	.04	.04	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.03.81	.04⅛	.03¼	.03
1.07½	1.07½	1.05	1.00	.97½	1.02½	1.05	1.05	1.05	1.05	1.05	1.05	1.07½	1.12½	1.20	1.25	1.25	1.25	1.27½	1.25	1.25	1.27½	1.09.08	1.30	.85	1.09
.03⅛	.03¼	.03⅛	.03	.02⅞	.03¼	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03¼	.03½	.03½	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03.27	.03¾	.02¾	.03
.03½	.03⅝	.03⅝	.03½	.03½	.03⅝	.03⅝	.03⅝	.03¾	.03¾	.03¾	.03¾	.03¾	.03⅞	.04	.04	.04	.04	.04	.04	.04	.04	.03.68	.04	.03	.03
1.10	1.10	1.10	1.10	1.07½	1.10	1.10	1.10	1.10	1.05	1.05	1.10	1.10	1.20	1.27½	.130	1.30	1.35	1.50	1.55	1.55	1.45	1.17.65	1.55	.90	1.14
.03⅛	.03¼	.03	.03	.03	.03⅛	.03¼	.03¼	.03¼	.03¼	.03⅛	.03⅛	.03⅛	.03⅝	.03½	.03½	.03½	.03½	.04	.03⅞	.03⅞	.03⅞	.03.28	.04	.02¾	.03
.03½	.03½	.03½	.03⅝	.03½	.03½	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03¾	.03⅞	.03⅞	.03⅞	.03¾	.04⅛	.04	.04	.04	.03.49	.04⅛	.03⅛	.03
1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.05	1.05	1.05	1.05	1.05	1.07.89	1.40	.90	1.12
.05	.05	.05	.05	.05	.05	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04¾	.04¾	.04¾	.04.77	.05¼	.04½	.04
1.50	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.55	1.55	1.50	1.50	1.50	1.58.72	1.70	1.45	1.60
.05½	.05½	.05½	.05½	.05⅞	.05⅛	.05⅛	.05⅛	.05⅛	.05⅛	.05⅛	.05¼	.05¼	.05¼	.05¼	.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05.3	.06¼	.04¼	.05
.06	.06	.06	.05⅞	.05½	.05⅞	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05½	.05½	.05½	.06	.06	.06	.06	.06	.06	.05.93	.07	.05¼	.06
.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04.02	.04½	.03¾	.04
1.50	1.50	1.50	1.50	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.40.68	1.60	1.00	1.53
.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05½	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.06.17	.08	.04	.07
.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.10½	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.10.31	.11	.08½	.10
.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.11½	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.10¼	.11.39	.12	.10	.11
.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.10.15	.10½	.07½	.09
.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.10.85	.11½	.09	.10
.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.14½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.14.14	.15	.12	.14
.31	.31	.31	.31	.31	.31	.31	.31	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30.52	.31	.29	.30
.08	.08	.08	.08	.08	.08	.07½	.07½	.07½	.07½	.07½	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07.93	.10	.06.5	.08
.05	.05	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¾	.05¾	.05½	.05½	.05½	.05½	.05¼	.05	.05.16	.05½	.05	.05
.29	.27½	.26	.25	.24½	.24½	.24	.24½	.26	.27	.26½	.26½	.26½	.26½	.26½	.26	.27	.27	.27	.27	.27	.27	.28.52	.39½	.24½	.32
.39	.39	.39	.38	.38	.38	.38	.38	.38	.39	.39½	.39½	.39	.39	.39	.39	.39	.39½	.39½	.39½	.39½	.39½	.38.24	.41	.36½	.38
.13½	.12	.12	.12	.12	.12	.12	.11½	.11½	.11½	.11½	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.13.18	.15	.11½	.14
.11½	.10½	.10½	.10½	.10½	.10½	.10½	.10	.10	.10	.10	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10	.10	.10½	.11.65	.13½	.10	.12
.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.13½	.13½	.15.23	.15½	.13½	.15
.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.12	.12	.13.73	.14	.12	.13
.16½	.16½	.15½	.14½	.14½	.13	.13	.13	.13	.13	.13	.12½	.12½	.12	.12½	.12½	.12½	.12½	.12½	.12½	.13	.13	.14.65	.18	.12	.15
1.75	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.72.5	1.80	1.65	1.78
2.30	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.27.59	2.70	2.10	2.41
.10	.10	.10	.10	.10	.10	.09	.09	.09	.09	.09	.09	.09	.09	.09	.10	.10	.10	.10	.10	.10	.10	.09.82	.10	.09	.10
.30.65	.29.65	.29.65	.28.15	.28.15	.28.15	.27.65	.27.65	.27.65	.27.65	.27.65	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.28.81	.30.65	.26.65	.29.4
.16.4	.16.4	.16.4	.15.15	.15.15	.16.15	.16.15	.16.15	.16.40	.16.65	.16.65	.16.65	.16.90	.16.90	.17.15	.17.15	.17.40	.17.40	.17.90	.17.90	.17.90	.17.90	.16.74	.17.9	.16.4	.13.3
.17.4	.17.4	.17.4	.16.15	.16.15	.17.15	.17.15	.17.15	.17.40	.17.65	.17.65	.17.65	.17.90	.17.90	.18.15	.18.15	.18.40	.18.40	.18.90	.19.40	.19.40	.19.40	.17.79	.19.4	.17.04	.17.7
.36	.36	.35	.35	.35	.35	.35	.35	.35	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34	.39.54	.46½	.34	.44.3
.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06.12	.06¼	.05⅞	.06.1
.05½	.05½	.05½	.05½	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05.18	.05½	.05	.05.2
.10¾	.10¾	.10¾	.10¾	.10¾	.08¾	.08¾	.08¾	.08¾	.08¾	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07	.07½	.08	09.5	.10¾	.07	.10.14

CRUDE PRICES IN ALL FIELDS AS POSTED BY MAJOR PURCHASING COMPANIES.

*NORTH LOUISIANA AND ARKANSAS

January			Feb.	March			April					May			July	August		
20	23	30	14	12	21	27	14	16	18	23	24	8	18	22	15	1	27	28
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
....	1.40	1.60	1.85	....	....	....	....	....	....	....	....	....	....	....	2.00	....	1.75	....
....	1.50	1.70	1.95	....	....	....	....	....	....	....	....	....	....	....	2.10	....	1.85	....
....	1.60	1.80	2.05	....	....	....	....	....	....	....	....	....	....	....	2.20	....	1.95	....
....	1.00	1.20	1.45	....	....	....	....	....	....	....	....	....	....	....	1.60	....	1.35	1.40
....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
....	1.35	1.55	1.80	....	....	....	....	....	....	....	....	....	....	....	1.95	....	1.70	1.75
....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
....	1.10	1.30	1.55	....	....	....	....	....	....	....	....	....	....	....	1.70	....	1.45	....
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	....
....	1.40	1.60	1.85	....	....	....	....	....	....	....	....	....	....	....	2.00	....	1.75	....
....	1.10	1.25	1.40	1.25	1.10	1.00	....	....	....	....	....	....	....	....	1.10	....	....	....
....	1.45	1.65	1.90	....	....	....	....	....	....	....	....	....	....	....	2.05	....	1.80	....
....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	....
....	1.50	1.75	2.00	....	....	....	....	....	1.75	....	....	....	....	....	1.90	1.65	....	....
....	....	....	....	....	....	....	....	....	.40	....								
....	....	....	....	....	....	....	....	....	.60	....	.40	.60	.70	.80	.80	....	....	....
....	....	....	....	....	....	....	....	....	1.10	....	....	....	....	....	1.15	....	....	....
....	....	....	....	....	....	....	....	.50	Gravity schedule revised. These grades eliminated April 18.									
....	1.00	1.15	1.30	1.15	1.00	....	.80	.80										
....	1.10	1.25	1.40	1.25	1.10	....	....	....	1.20	....	....	....	....	....	1.25	....	....	1.20
1.05	1.20	1.35	1.50	1.35	1.20	....	....	....	1.25	....	....	....	....	....	1.30	....	....	1.25
1.10	1.25	1.40	1.55	1.40	1.25	....	27 &	....										
1.15	1.30	1.45	1.60	1.45	1.30	....	above	....	1.30	....	....	....	....	....	1.35	....	....	1.30

ATLANTIC OIL PRODUCING CO.

January				Feb.	March		April			May				June	July	August		
1	19	23	30	14	13	21	14	15	18	5	8	14	22	23	16	27	28	
.70	....	.95	1.15	1.40	....	....	....	1.25	....	....	....	....	....	....	1.35	....	1.20	
.90	....	1.15	1.35	1.60	....	....	....	1.45	....	....	....	....	....	....	1.55	....	1.40	
....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	.90	....	....	
....	....	....	....	....	....	....	....	....	....	.60	....	....	....	....	.95	....	....	
....	....	....	....	....	....	....	....	.60	.40	....	.60	.70	.80	.90	....	.85	....	
....	....	....	....	....	....	....	....	1.00	1.10	....	....	....	....	....	1.15	....	....	
.85	.65	1.00	1.15	1.30	1.15	1.00	.80											
.95	....	1.10	1.25	1.40	1.20	1.15			1.20									

MONTANA, NEW

	January			February		March	
	1	23	31	13	18	7	10
Cat Creek ..	1.20	1.45	1.65	2.00	....	....	2.15
Sunburst . .	.90	1.05	1.12	1.20	....	1.40	....
Hog Back ..	....	....	1.70	2.05	....	....	2.20
Artesia . ..	....	....	....	....	....	....	....
Rock Creek .	.95	1.20	1.40	1.65	1.70	....	2.00
Big Muddy .	.75	1.00	1.30	1.55	1.60	....	2.00
Mule Creek .	.60	....	1.00	1.25	....	....	....
Grass Creek (light) ..	1.20	1.45	1.65	2.00	....	....	2.15
Grass Creek (heavy)	....	....	....	....	....	....	....
Elk Basin ..	1.20	1.45	1.65	2.00	....	....	2.15
Lance Creek.	1.15	1.40	1.60	1.95	....	....	2.15
Osage	1.15	1.40	1.60	1.95	....	....	2.15
Lost Soldier.	.78	.88	1.04	1.24	1.28	....	....
Greybull-Torchlight.	1.20	1.45	1.65	2.00	....	....	....
Hamilton Dome . .	.80	....	1.30	1.60	....	....	....
Salt Creek ..	.85	1.10	1.30	1.55	1.60	....	....

MIDDLE

	January			
	1	3	22	23
Lima	1.58	....	1.68	1.83
Wooster	1.40	1.50	....	1.70
Illinois	1.37	....	1.47	1.62
Indiana	1.38	....	1.48	1.63
Princeton	1.37	....	1.47	1.62
Plymouth	.75	....	1.00	1.15
Waterloo	.75	.90	....	1.00

OMESTIC MOVEMENT. INCLUDES AVERAGE PRICES FOR THE YEARS 1925, 1924 AND 1923. PI

July			August				September					October				November					
14	21	28	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8
.12	.11½	.11¼	.10¾	.10½	.09½	.09	.08	.07¾	.08¼	.09	.08¾	.08½	.08	.07¾	.08¼	.08	.08¼	.08½	.08½	.09	.0
.12½	.12⅛	.11¾	.11	.10⅞	.09¾	.09	.08	.07⅞	.08¾	.09½	.09	.08½	.08¼	.08	.08½	.08½	.08¾	.09½	.09½	.09½	.0
.12¾	.12½	.12¼	.11½	.11¼	.10¼	.09¼	.08½	.08¼	.09	.10	.09¾	.09¼	.08½	.08¼	.09	.09	.09½	.10	.10	.10¼	.1
.14	.14	.13¼	.13	.12½	.11⅜	.10½	.10¼	.10	.10½	.11	.11	.10⅜	.10¼	.10¼	.10⅜	.11	.11¼	.11½	.11½	.11¾	.1
.15	.14⅜	.14½	.14	.13½	.12½	.11½	.11¼	.11	.11½	.12	.11¾	.11⅜	.11½	.11½	.11¾	.12	.12¼	.12½	.12½	.12½	.1
.15½	.15½	.15½	.15¼	.14¾	.14	.12½	.12	.11⅞	.12½	.13	.13	.13	.12½	.12¾	.13	.13	.13¼	.13¼	.13½	.13½	.1
.13	.12¾	.12½	.12	.11½	.10½	.09¾	.08¾	.08½	.09½	.10¼	.10	.09½	.09	.08½	.09	.09	.09½	.10	.10¼	.10½	.1
.12	.11½	.11½	.10¾	.10½	.09½	.09	.08	.07¾	.08¼	.09	.08¾	.08½	.08	.07¾	.08¼	.08	.08¼	.08½	.08½	.09	.0
.13	.12½	.12¼	.11½	.10¾	.10¼	.09¼	.08½	.08⅛	.09	.10	.10¼	.09	.08¼	.08¼	.09¼	.09	.09¼	.09⅞	.10	.10¼	.1
.15¼	.14¾	.14¼	.14	.13¼	.12⅛	.11¼	.11	.10½	.11	.11½	.12	.11¼	.11¼	.11	.11½	.11¾	.12	.12¼	.12¼	.12¼	.1
.14½	.14½	.14½	.14½	.14¼	.13¼	.12¾	.12¼	.12	.12	.12	.12	.11½	.11½	.11½	.11½	.11½	.11	.11	.11	.11	.1
.15½	.15½	.15¼	.15¼	.14½	.14	.13¼	.12⅝	.12½	.12¼	.12½	.12½	.12¼	.12⅞	.12	.12	.12	.11⅜	.11⅜	.12	.12	.1
.16	.16	.16	.16	.15¼	.15¼	.14	.13¾	.13½	.13¼	.13½	.13½	.13¼	.13¼	.13¼	.13¼	.13¼	.12¾	.12¾	.12¾	.12¾	.1
.17¼	.17¼	.17¼	.17¼	.17¼	.17¼	.16	.15½	.15¼	.15¼	.15½	.15½	.15½	.15½	.15½	.15¼	.15¼	.15	.15	.15	.15	.1
.20	.20	.20	.20	.20	.20	.19	.18½	.18½	.18½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.19½	.2
.11	.11	.11	.11	.11	.11	.11	.11	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.0
.14½	.14½	.14	.13½	.13	.12½	.11½	.11¾	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11½	.11½	.11½	.11¼	.11¼	.1
.14½	.14½	.14	.13½	.13	.12¼	.11½	.11½	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.11¾	.11	.11	.10½	.10¼	.10¼	.1
.14½	.14½	.14	.13½	.13	.12¼	.11½	.11½	.11¼	.12	.13¼	.14¼	.14	.13¾	.12½	.11½	.10¼	.09¾	.09¼	.09	.09¼	.0
.14½	.14¼	.14	.13¾	.13¼	.12½	.11½	.11½	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11¾	.11½	.11½	.11¼	.11¼	.1
.14½	.14¼	.14	.13¾	.13¼	.12½	.11½	.11½	.11½	.12	.13¼	.14¼	.14	.13¾	.12¾	.12	.11¼	.11	.10½	.10¼	.10¼	.1
.14½	.14¼	.14	.13¾	.13¼	.12½	.11½	.11½	.12½	.12	.13¼	.14¼	.14	.13¾	.12½	.11½	.10¼	.09½	.09¼	.09	.09¼	.0
.13¼	.13¼	.13¼	.13¼	.13¼	.13¼	.13¼	.13	.11	.11	.11	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.13	.13	.13	.1
.13½	.13½	.13½	.13½	.13½	.13½	.13½	.13½	.11½	.11½	.11½	.12¾	.12¾	.13	.13	.13	.13	.13	.13	.13	.13	.1
.12½	.12¼	.12	.12	.11½	.10¼	.09¼	.08½	.08¼	.08¾	.09¾	.09¾	.09	.08½	.08¼	.08¾	.08¾	.09	.09½	.09½	.09¾	.0
.13	.13	.13	.12¾	.12	.10½	.09½	.09½	.09¼	.10¼	.10¾	.10¾	.10½	.10¼	.10¼	.10¼	.10¼	.10½	.10¾	.11	.11	.1
.03⅞	.03⅞	.04	.04	.04	.04⅛	.04¼	.04⅜	.04¾	.04⅞	.05½	.05	.05	.05	.04¾	.04¾	.04¾	.04⅞	.05	.05	.05	.0
.04¼	.04¼	.04¼	.04¼	.04½	.04½	.04¾	.05	.05¼	.05¼	.05½	.05¼	.05¼	.05¼	.05⅛	.05	.05⅛	.05¼	.05⅜	.05½	.05½	.0
.04 ¼	.04¼	.04¼	.04¼	.04½	.04½	.04½	.04⅝	.04¾	.05	.05¼	.05¼	.05¼	.05¼	.05	.05	.05	.05½	.05¼	.05¼	.05¼	.0
.04	.04	.04	.03⅞	.03⅞	.04	.04⅛	.04¼	.04⅜	.04⅝	.05	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.05	.05	.05	.05⅛	.0
.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.07	.07	.0
.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06½	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.07	.07¼	.07¼	.07¼	.0
.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.0
.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.08½	.07½	.07½	.07½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.06½	.0
.90	.90	1.00	1.00	1.10	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.10	1.17½	1.20	1.20	1.25	1.2
.90	.95	1.00	1.10	1.15	1.12½	1.15	1.10	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.20	1.25	1.30	1.30	1.30	1.4
.03¼	.03⅜	.03½	.03½	.03¾	.03¾	.03⅜	.03⅝	.03¾	.03¾	.03¾	.03¾	.03¾	.04	.04	.04	.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.0
.87½	.92½	1.00	1.07½	1.07½	1.05	1.00	.97½	1.02½	1.05	1.05	1.05	1.05	1.05	1.05	1.07½	1.12½	1.20	1.25	1.25	1.25	1.2
.02⅞	.02⅞	.03⅛	.03½	.03¼	.03⅛	.03	.02⅞	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03⅛	.03¼	.03½	.03½	.03⅝	.03⅝	.03⅝	.0
.03⅛	.03¼	.03½	.03½	.03⅜	.03⅝	.03½	.03½	.03⅝	.03⅝	.03⅝	.03¾	.03¾	.03¾	.03¾	.03¾	.03⅞	.04	.04	.04	.04	.0
.92½	.95	1.00	1.10	1.10	1.10	1.10	1.07½	1.10	1.10	1.10	1.10	1.05	1.05	1.10	1.10	1.20	1.27½	.130	1.30	1.35	1.5
.02⅞	.02¾	.03⅛	.03⅛	.03¼	.03	.03	.03	.03¼	.03¼	.03¼	.03¼	.03¼	.03⅛	.03½	.03⅛	.03¾	.03½	.03½	.03½	.03½	.0
.03⅛	.03¼	.03½	.03½	.03½	.03½	.03⅜	.03½	.03½	.03½	.03½	.03⅝	.03⅜	.03⅝	.03⅝	.03⅝	.03¾	.03⅞	.03⅞	.03¾	.03⅞	.0
.00	1.00	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.05	1.0
.05¼	.05¼	.05¼	.05	.05	.05	.05	.05	.05	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.04½	.0
.50	1.50	1.50	1.50	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.55	1.55	1.5
.05	.05	.05½	.05½	.05½	.05½	.05½	.05⅞	.05⅛	.05⅛	.05⅛	.05⅛	.05⅛	.05⅛	.05⅛	.05¼	.05¼	.05¼	.05¼	.05½	.05½	.0
.06	.06	.06	.06	.06	.06	.05⅝	.05½	.05⅝	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05½	.05½	.05½	.05½	.06	.06	.0
.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.0
.50	1.50	1.50	1.50	1.50	1.50	1.50	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.0
.06	.06	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05½	.04¾	.04¾	.04¾	.04¾	.04¾	.04¾	.0
.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.10½	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.09¼	.0
.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.10¼	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.0
.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.10	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.08¾	.0
.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11½	.11	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.0
.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.14½	.12½	.12½	.12½	.12½	.12½	.12½	.12½	.1
.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.3
.08	.08	.08	.08	.08	.08	.08	.08	.08	.07½	.07½	.07½	.07½	.07	.07	.07	.07	.07	.07	.07	.07	.0
.05	.05	.05	.05	.05	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05¼	.05⅝	.05½	.05½	.0
.29	.28	.29	.29	.27½	.26	.25	.24½	.24½	.24	.24½	.26	.27	.26½	.26½	.26½	.26½	.26½	.26	.27	.27	.2
.39	.39	.39	.39	.39	.39	.38	.38	.38	.38	.38	.38	.39	.39½	.39½	.39	.39	.39	.39	.39½	.39	.3
.13½	.13½	.14	.13½	.12	.12	.12	.12	.12	.12	.11½	.11½	.11½	.11½	.12	.12	.12	.12	.12	.12	.12	.1
.12	.12	.12½	.11½	.10½	.10½	.10½	.10½	.10½	.10½	.10	.10	.10	.10	.10½	.10½	.10½	.10½	.10½	.10½	.10½	.1
.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.15½	.1
.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.1
.16½	.16½	.16½	.16½	.16½	.15½	.14½	.14½	.13	.13	.13	.13	.13	.13	.12½	.12½	.12	.12½	.12½	.12½	.12½	.1
.75	1.75	1.75	1.75	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.6
.00	2.30	2.30	2.30	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.1
.00	.10	.10	.10	.10	.10	.10	.10	.10	.09	.09	.09	.09	.09	.09	.09	.09	.09	.10	.10	.10	.1
.0.65	.30.65	.30.65	.30.65	.29.65	.29.65	.28.15	.28.15	.28.15	.27.65	.27.65	.27.65	.27.65	.27.65	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.27.15	.2
.6.4	.16.4	.16.4	.16.4	.16.4	.16.4	.15.15	.15.15	.16.15	.16.15	.16.15	.16.40	.16.65	.16.65	.16.65	.16.90	.16.90	.17.15	.17.15	.17.40	.17.40	.1
.7.4	.17.4	.17.4	.17.4	.17.4	.17.4	.16.15	.16.15	.17.15	.17.15	.17.15	.17.40	.17.65	.17.65	.17.65	.17.90	.17.90	.18.15	.18.15	.18.40	.18.40	.1
.6	.36	.36	.36	.36	.35	.35	.35	.35	.35	.35	.35	.34	.34	.34	.34	.34	.34	.34	.34	.34	.3
.6	.06	.06	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.0
.05½	.05½	.05½	.05½	.05½	.05½	.05½	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.0
.0¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.08¾	.08¾	.08¾	.08¾	.08¾	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.07½	.0

NGES IN CRUDE PRICES IN ALL FIELDS AS POSTED BY MAJOR PURCHASING COMPANIES.

*NORTH LOUISIANA AND ARKANSAS

	January				Feb.	March			April					May			July	August		
	1	20	23	30	14	12	21	27	14	16	18	23	24	8	18	22	15	1	27	28
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
.....	1.15	....	1.40	1.60	1.85	....	....	....	....	....	....	....	....	....	....	....	2.00	....	1.75	....
.....	1.25	....	1.50	1.70	1.95	....	....	....	....	....	....	....	....	....	....	....	2.10	....	1.85	....
.....	1.35	....	1.60	1.80	2.05	....	....	....	....	....	....	....	....	....	....	....	2.20	....	1.95	....
.....	.75	....	1.00	1.20	1.45	....	....	....	....	....	....	....	....	....	....	....	1.60	....	1.35	1.40
.....	.90	....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
.....	1.10	....	1.35	1.55	1.80	....	....	....	....	....	....	....	....	....	....	....	1.95	....	1.70	1.75
.....	.90	....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
.....	.90	....	1.15	1.35	1.60	....	....	....	....	....	....	....	....	....	....	....	1.75	....	1.50	1.55
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	1.65
.....	.85	....	1.10	1.30	1.55	....	....	....	....	....	....	....	....	....	....	....	1.70	....	1.45	....
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	....
.....	1.15	....	1.40	1.60	1.85	....	....	....	....	....	....	....	....	....	....	....	2.00	....	1.75	....
.....	.95	....	1.10	1.25	1.40	1.25	1.10	1.00	....	....	....	....	....	....	....	....	1.10	....	....	....
.....	1.20	....	1.45	1.65	1.90	....	....	....	....	....	....	....	....	....	....	....	2.05	....	1.80	....
.....	1.00	....	1.25	1.45	1.70	....	....	....	....	....	....	....	....	....	....	....	1.85	....	1.60	....
.....	1.35	....	1.50	1.75	2.00	....	....	....	....	....	....	1.75	....	....	....	....	1.90	1.65	....	....
age)	....	....	....	....	....	....	....	....	....	....	.40	....	⌊							
.....	....	....	....	....	....	....	....	....	....	....	.60	....	⌋ .40	.60	.70	.80	.80	....	....	....
.....	....	....	....	....	....	....	....	....	....	....	1.10	....	....	....	....	....	1.15	....	....	....
age)	....	....	....	....	....	....	....	....	....	.50	Gravity schedule revised. These grades eliminated April 18.									
.....	.85	....	1.00	1.15	1.30	1.15	1.00	....	.80	.80										
.....	.95	....	1.10	1.25	1.40	1.25	1.10	....	....	....	1.20	....	....	....	....	....	1.25	....	....	1.20
.....	.95	1.05	1.20	1.35	1.50	1.35	1.20	....	....	....	1.25	....	....	....	....	....	1.30	....	....	1.25
.....	.95	1.10	1.25	1.40	1.55	1.40	1.25	....	⌊ 27 &											
.....	.95	1.15	1.30	1.45	1.60	1.45	1.30	....	⌋ above	....	1.30	....	....	....	....	....	1.35	....	....	1.30

Cat Creek .
Sunburst .
Hog Back .
Artesia . .
Rock Creek
Big Muddy
Mule Creek
Grass Creek
(light) .
Grass C
(heavy)
Elk Basin .
Lance Creek
Osage . ...
Lost Soldier
Greybull-
Torchlight
Hamilton
Dome .
Salt Creek .

ATLANTIC OIL PRODUCING CO.

January				Feb.	March			April					May			June	July	August		

Lima . ...
Wooster .

1923. PRICES GIVEN IN CENTS PER GALLON UNLESS OTHERWISE NOTED.

AVERAGE AND HIGH AND LOW PRICES FOR THREE YEARS

December 1	December 8	December 15	December 22	December 29	1925 Av.Prc. for Year	1925 High	1925 Low	1925 Av.Prc. 1st 6Mo.	1925 Av.Prc. 2d 6Mo.	1924 Av.Prc. for Year	1924 High	1924 Low	1924 Av.Prc. 1st 6Mo.	1924 Av.Prc. 2d 6Mo.	1923 Av.Price for Year	1923 High	1923 Low	1923 Av.Prc. 1st 6Mo.	1923 Av.Prc. 2d 6Mo.
.09	.09	.09	.08¾	.09	.09.77	.12½	.07¼	.10.34	.09.15	.08.43	.11½	.06¼	.09.82	.07.10	.09.23	.13½	.05¼	.11.64	.06.82
.09½	.09¼	.09½	.09¼	.09¼	.10.12	.13	.07½	.10.69	.09.54	.08.66	.11¾	.06¼	.09.94	.07.43	.09.39	.13½	.06	.11.78	.06.99
.10¼	.10¼	.09¾	.09½	.09½	.10.55	.13¾	.07¾	.11.07	.10.02	.08.96	.12¼	.06½	.10.28	.07.69	.09.78	.14¼	.06½	.12.32	.07.26
.11¾	.11¾	.11¾	.11	.11	.11.76	.14¾	.09	.12.48	.11.53	.10.03	.13¼	.08	.11.16	.08.93	.11.34	.15½	.07¼	.13.88	.08.80
.12½	.12⅝	.12⅜	.12¼	.12	.13.10	.16	.11	.13.71	.12.53	.10.98	.14¼	.09	.12.20	.09.81	.12.38	.16½	.08¼	.14.93	.09.84
.13½	.13½	.13¼	.13	.13¼	.13.84	.16¼	.11¼	.14.16	.13.52	.11.76	.15¼	.10	.12 92	.10.64	.13.6	.17½	.09½	.16.03	.11.17
.10½	.10¼	.10¼	.10	.10	.10.75	.13½	.08	.11.39	.10.28	.09.14	.12½	.06½	.10.50	.07.83	.10.00	.15	.06¼	.12.59	.07.51
.09	.09	.09	.08⅝	.08⅝	.09.74	.12½	.07¼	.10.34	.09.14	.08.44	.11¼	.06¼	.09.82	.07.12	.09.22	.13½	.05¼	.11.59	.06.85
.10¼	.10¼	.09⅞	.09½	.09½	.10.56	.13½	.08	.11.11	.10.00	.08.96	.12	.06⅜	.10.24	.07.72	.09.65	.14½	.06	.12.28	.07.16
.12¼	.12¼	.12¼	.11¾	.11¾	.12.89	.15¼	.10	.13.5	.12.27	.10.77	.14½	.08½	.12.17	.09.42	.12.04	.16	.08	.14.61	.09.47
.11	.11¼	.11¼	.11¼	.11¼	.12.76	.14½	.10¾	.13.23	.12.17	.11.36	.13¾	.09	.12.13	.10.61	.12.57	.16	.08¾	.14.61	.10.58
.12	.12½	.12½	.12⅝	.12⅝	.13.48	.15¾	.10¾	.13.9	.12.71	.12.24	.15	.09¾	.13.24	.11.28	.13.52	.17¼	.09½	.15.53	.11.51
.12¾	.13½	.13½	.13½	.13½	.14.82	.16¼	.12	.14.65	.14.99	.12.98	.15¾	.10½	.13.99	.12.01	.15 01	.18¼	.10	.16 43	.12 81
.15	.15¼	.15¼	.15¼	.15¼	.15.84	.17¼	.14½	.15.84	.15.84	.14.77	.17½	.11¾	.15.66	.13.91	.16.83	.20½	.13	.18.83	.14.81
.19½	.20	.20	.20	.20	.18.89	.20¼	.16½	.18.2	.19.59	.17.26	.19½	.16¼	.17.79	.16.76	.18.41	.23½	.16	.22.54	.14.28
.09	.09	.09	.09	.11	.10.17	.11	.09	.10.57	.09.77	.....	.....	.....	.....	.10.26	.....	.....	.....	.....	.....
.11¼	.11¼	.10⅜	.10¾	.10¾	.12.02	.15½	.09	.11.54	.12.46	.08.66	.11	.06	.09.12	.08.21	.09.13	.14¾	.05½	.11.44	.06.82
.10¼	.10¼	.10¼	.10	.10	.11.58	.15½	.08	.11.02	.12.15	.08.18	.10⅜	.06	.08.43	.07.92	.08.75	.13¾	.05½	.11.01	.06.48
.09¼	.09½	.09½	.09½	.09½	.11.2	.15½	.07¾	.10.57	.11.82	.07.67	.09¾	.05¾	.07.71	.07.64	.08.23	.13¾	.04½	.10.32	.06.15
.11¼	.11¼	.11	.10¾	.10¾	.11.99	.15¾	.08¾	.11.49	.12.48	.08.53	.11	.06	.08.95	.08.13	.08.85	.14	.04⅝	.11.00	.06.71
.10¼	.10¼	.10¼	.10	.10	.11.58	.15¾	.08½	.10.94	.12.19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.09¼	.09½	.09½	.09½	.09¾	.11.86	.15¾	.07¾	.10.57	.11.21	.07.55	.09¼	.05¾	.07.54	.07.56	.08.29	.13½	.04¾	.10.38	.06.20
.13	.13	.13	.13	.15	.12.81	.15	.11	.12.8	.12.78	.....	.....	.....	.....	.10.36	.....	.....	.....	.....	.....
.13	.13	.13	.13	.15	.13.07	.15	.11½	.13.09	.13.06	.....	.....	.....	.....	.11.44	.....	.....	.....	.....	.....
.09¾	.09¾	.09¾	.09½	.09½	.10.33	.12¾	.07¾	.10.77	.09.88	.08.50	.11½	.06½	.09.52	.07.51	.09.01	.13½	.05¾	.11.34	.06.69
.11	.10¾	.10½	.10½	.10½	.10.89	.13	.08	.10.86	.10.92	.08.54	.11¼	.06½	.09.49	.07.64	.09.16	.14	.05¾	.11.42	.06.86
.05	.05	.05	.05	.05⅛	.04.45	.05⅛	.03⅞	.04.28	.04.63	.04.49	.06	.04	.04.64	.04.35	.04.00	.05	.03¾	.04.12	.03.93
.05½	.05½	.05½	.05⅜	.05½	.04.79	.05½	.04¼	.04.57	.05.02	.04.73	.06¼	.04¼	.04.92	.04.55	.04.24	.05¼	.04	.04.33	.04.15
.05¼	.05¼	.05¼	.05¼	.05½	.04.67	.05½	.04¼	.04.61	.04.7	.04.83	.06½	.04¼	.05.08	.04.59	.04.36	.04¾	.04	.04.40	.04.32
.05⅛	.05⅜	.05⅜	.05⅜	.05¼	.04.45	.05⅜	.03⅞	.04.28	.04.62	.04.46	.06¼	.03¾	.04.67	.04.26	.03.86	.04½	.03½	.03.92	.03.81
.07	.07¼	.07¼	.07¼	.07¼	.06.56	.07½	.06	.06.79	.06.34	.06.71	.07⅞	.05¾	.06.74	.06.69	.06.52	.07¼	.05⅝	.06.80	.06.24
.07¼	.07½	.07½	.07½	.07½	.06.81	.07¾	.06¼	.06.93	.06.71	.07.04	.08	.06	.07.13	.06.96	.06.84	.07¾	.05¾	.07.17	.06.51
.07½	.07½	.07½	.07½	.07½	.07.5	.07½	.07½	.07.5	.07.5	.....	.....	.....	.....	.07.50	.....	.....	.....	.....	.....
.06½	.06½	.06½	.06½	.06½	.07.74	.08½	.06½	.08.0	.07.46	.....	.....	.....	.....	.07.67	.....	.....	.....	.....	.....
1.25	1.25	1.25	1.25	1.25	1.08.99	1.30	.90	1.09.23	1.08.75	.92.7	1.20	.72½	.90.58	.94.81	.79.55	1.00	.06	.84.80	.74.30
1.30	1.40	1.40	1.35	1.35	1.18.12	1.50	.90	1.15.19	1.17.02	1.06.65	1.30	.90	1.08.65	1.04.7	1.04.06	1.15	.85	1.09.20	1.00.00
.04⅛	.04⅛	.04⅛	.04⅛	.04⅛	.03.81	.04⅛	.03¼	.03.64	.03.98	.03.65	.04¼	.03¼	.03.69	.03.61	.03.24	.03¾	.02½	.03.38	.03.10
1.25	1.27½	1.25	1.25	1.27½	1.09.08	1.30	.85	1.09.13	1.09.04	.95.4	1.25	.72½	.97.30	.93.61	.95.11	1.15	.70	1.03.68	.86.54
.03⅝	.03⅜	.03⅝	.03⅜	.03⅝	.03.27	.03¾	.02¾	.03.25	.03.26	.02.91	.03⅜	.02½	.02.99	.02.84	.02.66	.03¼	.02¼	.02.98	.02.35
.04	.04	.04	.04	.04	.03.68	.04	.03	.03.49	.03.85	.03.50	.04¼	.03⅜	.03.54	.03.46	.03.05	.03¾	.02¾	.03.32	.02.78
1.35	1.50	1.55	1.55	1.45	1.17.65	1.55	.90	1.14.71	1.17.11	.93.2	1.25	.72½	.95.00	.91.5	.87.95	1.15	.60	1.00.60	.77.30
.03½	.04	.03⅞	.03⅞	.03⅞	.03.28	.04	.02¾	.03.28	.03.28	.02.90	.03⅝	.02½	.02.99	.02.80	.02.55	.03	.02¼	.02.74	.02.36
.03⅞	.04⅛	.04	.04	.04	.03.49	.04⅛	.03⅛	.03.54	.03.63	.03.47	.04¼	.03⅛	.03.56	.03.88	.02.96	.03¼	.02½	.03.03	.02.82
1.05	1.05	1.05	1.05	1.05	1.07.89	1.40	.90	1.12.88	1.02.88	.94.7	1.15	.85	.94.61	.94.81	.92.10	1.20	.65	1.06.00	.77.11
.04½	.04½	.04½	.04¾	.04¾	.04.77	.05¼	.04½	.04.79	.04.75	.04.41	.05	.03½	.04.65	.04.18	.04.00	.05	.02¾	.04.67	.03.33
1.55	1.50	1.50	1.50	1.50	1.58.72	1.70	1.45	1.60.21	1.57.23	1.61.60	1.95	1.15	1.70.60	1.52.96	1.36.96	1.60	1.10	1.54.93	1.23.00
.05½	.05½	.05½	.05½	.05½	.05.3	.06¼	.04¼	.05.34	.05.29	.05.27	.06	.05	.05.35	.05.19	.05.40	.06½	.04⅝	.05.70	.04.98
.06	.06	.06	.06	.06	.05.93	.07	.05¼	.06.16	.05.7	.05.76	.06½	.05¼	.05.69	.05.47	.05.60	.06¾	.05	.05.94	.05.25
.04	.04	.04	.04	.04	.04.02	.04½	.03¾	.04.05	.04	.....	.....	.....	.....	.03.64	.....	.....	.....	.....	.....
1.00	1.00	1.00	1.00	1.00	1.40.68	1.60	1.00	1.53.44	1.21.54	.....	.....	.....	.....	1.40	.....	.....	.....	.....	.....
.04¾	.04¾	.04¾	.04¾	.04¾	.06.17	.08	.04	.07	.05.34	.04.89	.05½	.04	.05.42	.04.37	.06.06	.07¼	.04¾	.06.67	.05.26
.09¼	.09¼	.09¼	.09¼	.09¼	.10.31	.11	.08½	.10.38	.10.24	.11.71	.15	.08½	.14.19	.09.31	.12.49	.14	.10⅝	.12.21	.12.77
.10¼	.10¼	.10¼	.10¼	.10¼	.11.39	.12	.10	.11.54	.11.24	.13.08	.16	.10	.15.25	.11.00	.13.17	.15	.12	.12.80	.13.55
.08¾	.08¾	.08¾	.08¾	.08¾	.10.15	.10½	.07½	.09.81	.10.49	.10.58	.13½	.07½	.12.94	.08.31	.11.03	.12½	.10	.10.80	.11.27
.09¾	.09¾	.09¾	.09¾	.09¾	.10.85	.11½	.09	.10.96	.10.74	.11.95	.14½	.09	.13.97	.10.00	.11.75	.13½	.10½	.11.54	.12.05
.12½	.12½	.12½	.12½	.12½	.14.14	.15	.12	.14.35	.13.96	.14.04	.16	.12	.15.43	.12.70	.13.67	.15½	.12½	.13.30	.14.05
.30	.30	.30	.30	.30	.30.52	.31	.29	.30.58	.30.46	.02.79	.29	.23	.27.42	.28.41	.26.42	.28	.23	.26.80	.24.04
.07	.07	.07	.07	.07	.07.93	.10	.06.5	.08.38	.07.48	.06.76	.09	.04	.07.30	.06.24	.....	.....	.....	.....	.....
.05½	.05½	.05½	.05¼	.05	.05.16	.05½	.05	.05.09	.05.24	.04.46	.05⅜	.03	.04.18	.04.74	.02.54	.03	.02⅛	.02.42	.02.65
.27	.27	.27	.27	.27	.28.52	.39½	.24½	.32.62	.24.42	.27.57	.34	.20½	.27.52	.27.93	.17.80	.22	.13	.19.22	.16.34
.39½	.39½	.39½	.39½	.39½	.38.24	.41	.36½	.38.87	.38.9	.36.55	.40½	.33	.37.25	.35.87	.33.37	.40	.31½	.36.06	.31.75
.12	.12	.12	.12	.12	.13.18	.15	.11½	.14.12	.12.25	.13.52	.15½	.11	.14.25	.12.81	.11.47	.12¾	.10	.12.25	.10.70
.10½	.10	.10	.10½	.10½	.11.65	.13½	.10	.12.62	.10.69	.11.76	.13½	.09	.12.50	.11.05	.09.79	.10½	.09	.10.18	.09.40
.15½	.15½	.15½	.13½	.13½	.15.23	.15½	.13½	.15.13	.15.34	.....	.....	.....	.....	.15	.....	.....	.....	.....	.....
.14	.14	.14	.12	.12	.13.73	.14	.12	.13.62	.13.85	.....	.....	.....	.....	.13	.....	.....	.....	.....	.....
.12½	.12½	.12½	.13	.13	.14.65	.18	.12	.15.49	.13.84	.13.16	.16½	.10	.14.60	.11.18	.13.88	.20	.09½	.17.26	.10.51
1.65	1.65	1.65	1.65	1.65	1.72.5	1.80	1.65	1.78.26	1.66.9	1.69.34	1.80	1.35	1.62.31	1.76.11	1.56.90	1.70	1.35	1.62.20	1.51.60
2.10	2.10	2.10	2.10	2.10	2.27.59	2.70	2.10	2.41.35	2.13.86	.04.87	.05½	.03½	.04.74	.04.99	.04.28	.04¾	.03½	.04.46	.04.10
.10	.10	.10	.10	.10	.09.82	.10	.09	.10	.09.65	.....	.....	.....	.....	.10	.....	.....	.....	.....	.....
5 .27.15	.27.15	.27.15	.27.15	.27.15	.28.81	.30.65	.26.65	.29.4	.28.19	.27.05	.28.15	.24.04	.27.52	.26.59	.27.41	.29¾	.25.15	.28.99	.25.83
0 .17.40	.17.90	.17.90	.17.90	.17.90	.16.74	.17.9	.16.4	.13.38	.16.71	.13.65	.14	.13½	.13.81	.13½	.13.12	.14	.12½	.13.14	.13.08
0 .18.40	.18.90	.19.40	.19.40	.19.40	.17.79	.19.4	.17.04	.17.78	.17.76	.18.10	.18.5	.17.9	.18.31	.17.9	.17.14	.18.05	.16.04	.17.22	.17.06
.34	.34	.34	.34	.34	.39.54	.46½	.34	.44.33	.34.77	.43.14	.45½	.37½	.41.35	.44.87	.38.23	.40½	.36½	.39.21	.37.34
.06⅛	.06⅛	.06⅛	.06⅛	.06⅛	.06.12	.06¼	.05⅞	.06.14	.06.11	.05.26	.06¼	.04	.04.97	.05.53	.03.25	.04	.03	.03.17	.03.34
.05	.05	.05	.05	.05	.05.18	.05½	.05	.05.21	.05.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.07½	.07½	.07	.07½	.08	09.5	.10¾	.07	.10.14	.08.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PANIES.

MONTANA, NEW MEXICO AND WYOMING

	January 1	January 23	January 31	February 13	February 18	March 7	March 10	March 16	May 1	July 13	July 21	August 1	August 27	August 28	Sept. 10	Oct. 12	Dec. 10
Cat Creek ..	1.20	1.45	1.65	2.00	....	....	2.15	....	....	....	....	....	....	1.90	....	....	....
Sunburst . .	.90	1.05	1.12	1.20	....	1.40	....	....	....	1.55	....	....	....	....	....	....	1.35
Hog Back ..	....	....	1.70	2.05	....	....	2.20	....	....	....	....	....	....	1.95	....	....	....
Artesia . ..	....	....	....	....	....	....	....	....	....	....	1.70	....	....	1.45	....	1.35	....
Rock Creek .	.95	1.20	1.40	1.65	1.70	....	2.00	....	....	....	....	....	....	1.75	....	....	....
Big Muddy .	.75	1.00	1.30	1.55	1.60	....	2.00	....	....	....	....	....	....	1.75	....	....	....
Mule Creek .	.60	....	1.00	1.25	....	....	....	1.50	....	....	....	....	....	1.25	....	....	....
Grass Creek (light) ..	1.20	1.45	1.65	2.00	....	....	2.15	....	....	....	....	....	....	1.90	....	....	....
Grass Creek (heavy)	....	....	....	....	....	....	....	....	....	....	....	....	....	.90	....	....	....
Elk Basin ..	1.20	1.45	1.65	2.00	....	....	2.15	....	....	....	....	....	....	1.90	....	....	....
Lance Creek.	1.15	1.40	1.60	1.95	....	....	2.15	....	....	....	....	....	....	1.90	....	....	....
Osage	1.15	1.40	1.60	1.95	....	....	2.15	....	....	....	....	....	....	1.90	....	....	....
Lost Soldier.	.78	.88	1.04	1.24	1.28	....	....	....	1.35	....	....	....	....	....	1.10	....	....
Greybull-Torchlight.	1.20	1.45	1.65	2.00	....	....	....	....	....	....	....	....	....	1.90	....	....	....
Hamilton Dome . .	.80	....	1.30	1.60	....	....	....	....	....	....	....	....	....	1.35	....	....	....
Salt Creek ..	.85	1.10	1.30	1.55	1.60	....	....	....	....	....	....	....	....	....	....	....	....

	August 1	August 27	August 28	Sept. 10	Oct. 12	Dec. 10
29 to 29.9	1.48	1.23	....	....	....	....
30 to 30.9	1.56	1.31	....	....	....	....
31 to 31.9	1.64	1.39	....	....	....	....
32 to 32.9	1.72	1.47	....	....	....	....
33 to 33.9	1.80	1.55	....	....	....	....
34 to 34.9	1.88	1.63	....	....	....	....
35 to 35.9	1.96	1.71	....	....	....	....
36 to 36.9	2.04	1.79	....	....	....	....
37 and above	2.12	1.87	....	....	....	....

MIDDLE WESTERN STATES

	January 1	January 3	January 22	January 23	January 31	February 13	February 16	Mar. 24	Apr. 3	July 6	July 11	August 21	August 28	Oct. 14
Lima	1.58	....	1.68	1.83	2.08	2.33	....	2.23	....	....	2.33	2.23	1.98	....
Wooster	1.40	1.50	....	1.70	1.95	2.05	....	....	....	....	....	....	....	....

30 to 32.9 ..	.90	1.15	1.35	....	....	1.55		....	29 to 29.9	1.43	1.41	1.25	30 to 32.9	
33 to 35.9 ..	1.10	1.35	1.55	....	....	1.80		....	30 to 30.9	1.56	1.47	1.31	33 to 35.9	
36 to 38.9 ..	1.25	1.50	1.70	....	....	2.00		....	31 to 31.9	1.64	1.53	1.39	36 to 38.9	
39 to 41.9 ..	1.25	1.60	1.85	....	....	2.25		....	32 to 32.9	1.72	1.59	1.47	39 to 41.9	
42 and above	1.25	1.60	1.95	....	2.00	2.35		....	33 to 33.9	1.80	1.65	1.55	42 and above ...	
Currie	1.25	1.50	1.80	....	....	2.00	Below 42	2.00	34 to 34.9	1.88	1.71	1.63	Lytton Springs ..	
Powell	1.25	1.50	1.80	....	....	2.00	42 & above	2.25	35 to 35.9	1.96	1.77	1.71	Powell, Currie, R	
Mexia	1.25	1.50	1.70	1.80	....	2.00			36 to 36.9	2.04	1.83	1.79	Mexia-Wortham .	
Wortham ..	1.25	1.50	1.70	1.80	....	2.00			37 to 37.9	2.12	1.89	1.87	Moran, Below 30 .	
									38 to 38.9	2.20	1.95	....	30 to 32.9	
									39 to 39.9	2.28	2.01	2.03	33 to 35.9	
									40 to 40.9	2.36	2.07	2.11	36 and above	
									41 to 41.9	2.44	2.13	2.19		
									42 to 42.9	2.52	2.19	2.27		
									43 to 43.9	2.60	2.25	2.35		
									44 and above	2.68	2.31	2.43		

*Effective only in Ok'ahoma. Same prices established in North and East Central Texas on November 23.

EASTERN STATES

	January			February				Mar.	April			May
	1	23	31	2	13	14	20	23	2	17	23	20
Pennsylvania grade oil in New York Transit Lines	3.10	3.35	3.60	....	....	3.85	....	3.65	....	3.40	....	3.65
Bradford District Oil in National Transit Lines	3.10	3.35	3.60	....	....	3.85	....	3.65	....	3.40	....	3.65
Pennsylvania grade oil in National Transit Lines	3.00	3.25	3.50	....	....	3.75	....	3.55	....	3.30	....	3.55
Pennsylvania grade oil Southwest Pennsylvania pipe line lines.	3.00	3.25	3.50	....	....	3.75	....	3.55	....	3.30	....	3.55
Gaines grade oil in National Transit Lines	....	....	....	....	....	....	3.55	....	....	3.15	....	3.30
Pennsylvania grade oil in Eureka pipe line lines	3.00	3.25	3.50	....	....	3.75	....	3.50	....	3.25	....	3.50
Pennsylvania grade oil in Buckeye Pipe Line lines	3.00	3.25	3.50	....	....	3.75	....	3.40	....	3.15	....	3.40
Cabell grade oil in Eureka Pipe Line lines	1.45	1.70	1.95	....	2.20	....	....	....	....	2.05	....	2.20
Corning grade oil in Buckeye Pipe Line lines	1.50	1.70	....	1.95	2.25	....	....	....	2.10	....	1.95	....
Somerset medium oil in Cumberland lines	1.55	1.80	2.05	....	2.30	....	....	....	....	2.15	....	2.30
Somerset light oil in Cumberland lines	1.70	1.95	2.20	....	2.45	....	....	....	....	2.30	....	2.45
Ragland grade oil in Cumberland lines	.90	1.05	1.20	....	1.30	....	....	....	....	....	....	....

GULF COAST

	January					February			April		June	July	Aug.	Nov.
	1	15	20	29	30	12		13	10	13	15	1	3	23
GULF COAST—														
Grade A	1.50	....	....	....	1.75	2.00	.....	....	....	1.75	....	....	1.50	...
Grade B	1.25	....	....	....	1.50	1.75	.....	....	....	1.50	1.75	....	1.25	...
High Island (Sun Co.)	.85	....	....	1.20	....	....	.....	....	....	....	....	....	....	...
SOUTHWEST TEXAS—														
*Lockhart (Lytton Springs)	....	....	....	....	....	....	.....	....	1.75	....	2.00	....		
Laredo (Mirando City)	.75	....	....	....	....	....	.....	....	....	....	....	1.00	....	1.05
Luling	.90	....	1.00	....	....	....	.....	....	....	....	....	1.05	....	1.10
Callihan	1.65	....	....	....	1.90	2.15	.....	....	....	1.90	....	....	1.65	...
Rockdale	1.25	....	....	....	....	....	.....	....	....	....	....	....	....	...
Webb-Jim Hogg Counties	....	.85	....	....	....	....	.....	....	....	....	....	1.15	....	...
Zapata County	....	....	....	....	....	1.00	.....	....	....	....	....	....	....	...
Piedras Pintas	....	....	....	....	....	....	.....	....	....	....	....	....	....	...
Boling	....	....	....	....	....	....	.....	....	....	....	....	....	....	...
*Somerset (Grayburg Oil Co.):														
Below 26	.85	....	....	....	....	....	Below 30	1.25						
26 and above	.95	....	....	....	....	....	30 to 32.9	1.35						
							33 to 35.9	1.80						
							36 to 38.9	1.95						
							39 to 41.9	2.10						
							42 & above	2.35						

Grade A and B prices apply to Sour Lake, Goose Creek, Vinton, West Columbia, Orange, Jennings, Spindletop, Pierce Junction, Hull, Blue Ridge, and other pools of the Gulf Coast area. Following are the specifications for Gulf Coast crudes as posted by the Humble O. & R. Co.: Grade "A"—Viscosity not less than 100 seconds at 100° F. Saybolt. Sulphur not over .4 per cent. Baume gravity not over 25 at 60° F. Cold test of distillates having viscosity of 1,000 seconds at 100° F., A. S. T. M. method. Grade "B"—Embraces all Coastal crude which does not meet the test for "A" Grade crude.

*Lytton Springs crude placed on same gravity schedule as North and East Central Texas by Humble O. & R. Co. July 10, and by Magnolia Petroleum Co. Somerset follows same gradings and prices as put into effect July 10 by Humble O.& R. Co.

o 35.9	1.10	1.35	1.55	....	1.80	....	29 to 29.9	1.48	1.41	1.23
o 38.9	1.25	1.50	1.70	....	2.00	....	30 to 30.9	1.56	1.47	1.31
o 41.9	1.25	1.60	1.85	....	2.25	....	31 to 31.9	1.64	1.53	1.39
nd above	1.25	1.60	1.95	....	2.35	....	32 to 32.9	1.72	1.59	1.47
on Springs	....	....	....	....	....	2.00	33 to 33.9	1.80	1.65	1.55
ell, Currie, Richland	1.25	1.50	1.80	....	2.00	....	34 to 34.9	1.88	1.71	1.63
ia-Wortham	1.25	1.50	1.70	1.80	2.00	....	35 to 35.9	1.96	1.77	1.71
an, Below 30	.75	1.00	1.15	....	1.35	....	36 to 36.9	2.04	1.83	1.79
o 32.9	.90	1.15	1.35	....	1.55	....	37 to 37.9	2.12	1.89	1.87
o 35.9	1.10	1.35	1.55	....	1.80	....	38 to 38.9	2.20	1.95	....
nd above	1.25	1.50	1.70	....	2.00	....	39 to 39.9	2.28	2.01	2.03
							40 to 40.9	2.36	2.07	2.11
							41 to 41.9	2.44	2.13	2.19
							42 to 42.9	2.52	2.19	2.27
							43 to 43.9	2.60	2.25	2.35
							44 and above	2.68	2.31	2.43

Stephens—
Below 26 .....
26 and above .....
Smackover—
Below 23
23 to 23.9 .....
Below 24 .....
24 to 24.9 .....
Below 25 .....
25 to 25.9 .....
26 to 26.9 .....
27 to 27.9 .....
28 and above .....

TES

	May	—June—		July	—August—					Oct.	—November—		—December—	
23	20	6	10	8	11	17	18	19	29	14	23	30	11	12
....	3.65	3.90	....	....	3.65	3.40	....	....	3.15	....	3.40	....	....	3.65
....	3.65	3.90	....	....	3.65	3.40	....	....	3.15	....	3.40	....	....	3.65
....	3.55	3.80	....	....	3.55	3.30	....	....	3.05	....	3.30	....	....	3.55
....	3.55	3.80	....	....	3.55	3.30	....	....	3.05	....	3.30	....	....	3.55
....	3.30	3.45	....	....	3.20	2.95	....	....	2.70	....	2.95	....	....	....
....	3.50	3.75	....	....	3.50	3.25	....	....	3.00	....	3.25	....	....	3.50
....	3.40	3.75	....	....	3.50	3.25	3.00	....	2.80	....	3.05	....	....	3.30
....	2.20	2.35	....	....	....	2.20	....	....	2.10	1.95	2.10	....	....	....
1.95	....	....	2.05	2.25	....	....	....	1.80	....	....	....	....	1.95	....
....	2.30	2.45	....	....	....	2.30	....	....	2.20	2.05	2.20	....	....	....
....	2.45	2.60	....	....	....	2.45	....	....	2.35	2.20	2.35	....	....	....
....	....	....	....	....	....	1.20	....	....	1.10	1.00	1.10	1.15	....	....

Smackover—
Below 25 .....
25 to 25.9 .....
26 to 26.9 .....
27 to 27.9 .....
28 and above .....

*Standard Oil Co. of Louisiana.

THE TEXAS CO.

Aug. 3	Nov. 23	Dec. 26		—January— 1	29	Feb. 12	April 13		July 18	Aug. 3
1.50	....	....	Vinton	1.50	1.75	2.00	1.75			
1.25	....	....	Orange	1.50	1.75	2.00	1.75			
....	....	....	Sour Lake	1.50	1.75	2.00	1.75			
....	1.05	....	Humble	1.50	1.75	2.00	1.75	Grade A	1.75	1.50
....	1.10	....	Markham	1.50	1.75	2.00	1.75	Grade B	1.50	1.25
1.65	....	....	Columbia	1.50	1.50	2.00	1.75			
....	....	....								
....	....	....								
....	....	....								
....	....	1.75								
..	....	1.50								

14 to 14.9 .....
15 to 15.9 .....
16 to 16.9 .....
17 to 17.9 .....
18 to 18.9 .....
19 to 19.9 .....
20 to 20.9 .....
21 to 21.9 .....
22 to 22.9 .....
23 to 23.9 .....
24 to 24.9 .....
25 to 25.9 .....
26 to 26.9 .....
27 to 27.9 .....
28 to 28.9 .....
29 to 29.9 .....
30 to 30.9 .....
31 to 31.9 .....
32 to 32.9 .....
33 to 33.9 .....
34 to 34.9 .....
35 to 35.9 .....
36 to 36.9 .....
37 to 37.9 .....
38 to 38.9 .....
39 to 39.9 .....
40 to 40.9 .....
41 to 41.9 .....
42 to 42.9 .....

*These figures apply to Rosecrans

Petroleum Co. July 11.

							29 to 29.9	1.48	1.41	1.23
	1.10	1.35	1.55	....	1.80	....	30 to 30.9	1.56	1.47	1.31
	1.25	1.50	1.70	....	2.00	....	31 to 31.9	1.64	1.53	1.39
	1.25	1.60	1.85	....	2.25	....	32 to 32.9	1.72	1.59	1.47
	1.25	1.60	1.95	....	2.35	....	33 to 33.9	1.80	1.65	1.55
	....	....	....	....	....	2.00	34 to 34.9	1.88	1.71	1.63
rie, Richland	1.25	1.50	1.80	....	2.00	....	35 to 35.9	1.96	1.77	1.71
am	1.25	1.50	1.70	1.80	2.00	....	36 to 36.9	2.04	1.83	1.79
w 30	.75	1.00	1.15	....	1.35	....	37 to 37.9	2.12	1.89	1.87
	.90	1.15	1.35	....	1.55	....	38 to 38.9	2.20	1.95	....
	1.10	1.35	1.55	....	1.80	....	39 to 39.9	2.28	2.01	2.03
	1.25	1.50	1.70	....	2.00	....	40 to 40.9	2.36	2.07	2.11
							41 to 41.9	2.44	2.13	2.19
							42 to 42.9	2.52	2.19	2.27
							43 to 43.9	2.60	2.25	2.35
							44 and above	2.68	2.31	2.43

May	—June—		July	—August—				Oct.	—November—		—December—	
20	6	10	8	11	17	18	19	29	14	23	30	11	12
3.65	3.90	....	....	3.65	3.40	....	....	3.15	....	3.40	....	....	3.65
3.65	3.90	....	....	3.65	3.40	....	....	3.15	....	3.40	....	....	3.65
3.55	3.80	....	....	3.55	3.30	....	....	3.05	....	3.30	....	....	3.55
3.55	3.80	....	....	3.55	3.30	....	....	3.05	....	3.30	....	....	3.55
3.30	3.45	....	....	3.20	2.95	....	....	2.70	....	2.95	....	....	....
3.50	3.75	....	....	3.50	3.25	....	....	3.00	....	3.25	....	....	3.50
3.40	3.75	....	....	3.50	3.25	3.00	....	2.80	....	3.05	....	....	3.30
2.20	2.35	....	....	....	2.20	....	....	2.10	1.95	2.10	....	....	....
....	....	2.05	2.25	....	....	....	1.80	....	....	....	....	1.95	....
2.30	2.45	....	....	....	2.30	....	....	2.20	2.05	2.20	....	....	....
2.45	2.60	....	....	....	2.45	....	....	2.35	2.20	2.35	....	....	....
....	....	....	....	....	1.20	....	....	1.10	1.00	1.10	1.15	....	....

Nov. 23	Dec. 26
....	....
....	....
....	....
1.05	....
1.10	....
....	....
....	....
....	....
....	....
....	1.75
....	1.50

m Co. July 11.

THE TEXAS CO.

	—January—		Feb.	April		July	Aug.
	1	29	12	13		18	3
Vinton	1.50	1.75	2.00	1.75			
Orange	1.50	1.75	2.00	1.75			
Sour Lake	1.50	1.75	2.00	1.75			
Humble	1.50	1.75	2.00	1.75	Grade A	1.75	1.50
Markham	1.50	1.75	2.00	1.75	Grade B	1.50	1.25
Columbia	1.50	1.50	2.00	1.75			

	—January—		
Stephens—	1	19	23
Below 26	.70	....	.95
26 and above	.90	....	1.15
Smackover—			
Below 23			
23 to 23.9	....	....	....
Below 24	....	....	....
24 to 24.9	....	....	....
Below 25	.85	.65	1.00
25 to 25.9	.95	....	1.10
26 to 26.9	.95	1.05	1.20
27 to 27.9	.95	1.10	1.25
28 and above	.95	1.15	1.30

	—January—			
Smackover—	1	20	23	31
Below 25	.85	....	1.00	1.15
25 to 25.9	.95	....	1.10	1.25
26 to 26.9	.95	1.05	1.20	1.35
27 to 27.9	.95	1.10	1.25	1.40
28 and above	.95	1.15	1.30	1.45

*Standard Oil Co. of Louisiana.

	Jan. 1	Feb. 2	S
14 to 14.9	$1.00	$1.25	
15 to 15.9	1.00	1.25	
16 to 16.9	1.00	1.25	
17 to 17.9	1.00	1.25	
18 to 18.9	1.00	1.25	
19 to 19.9	1.00	1.25	
20 to 20.9	1.01	1.27	
21 to 21.9	1.02	1.30	
22 to 22.9	1.03	1.33	
23 to 23.9	1.05	1.36	
24 to 24.9	1.07	1.40	
25 to 25.9	1.10	1.44	
26 to 26.9	1.13	1.48	
27 to 27.9	1.16	1.52	
28 to 28.9	1.19	1.56	
29 to 29.9	1.22	1.60	
30 to 30.9	1.25	1.64	
31 to 31.9	1.28	1.68	
32 to 32.9	1.31	1.72	
33 to 33.9	1.34	1.76	
34 to 34.9	1.37	1.80	
35 to 35.9	1.40	1.85	
36 to 36.9	1.46*	1.92*	
37 to 37.9	1.52*	2.00*	
38 to 38.9	1.58*	2.08*	
39 to 39.9	1.64*	2.16*	
40 to 40.9	1.70*	2.24*	
41 to 41.9	1.76*	2.32*	
42 to 42.9	1.82*	2.40*	

*These figures apply to Rosecrans Field only, 35 gravity

ATLANTIC OIL PRODUCING CO.

	January			Feb.	March		April			May				June	July	August	
	19	23	30	14	13	21	14	15	18	5	8	14	22	23	16	27	28
)	....	.95	1.15	1.40	....	....	....	1.25	....	....	....	....	....	....	1.35	....	1.20
)	....	1.15	1.35	1.60	....	....	....	1.45	....	....	....	....	....	....	1.55	....	1.40
							....	....	....	.40	....	....	....	....	.90	....	....
	....	....	....	....	....	....	....	....	....	.60	....	....	....	....	.95	....	....
	....	....	....	....	....	....	....	.60	.40	....	.60	.70	.80	.90	....	.85	....
	....	....	....	....	....	....	....	1.00	1.10	....	....	....	....	....	1.15	....	....
5	.65	1.00	1.15	1.30	1.15	1.00	.80										
5	....	1.10	1.25	1.40	1.30	1.15	....	....	1.20	....	....	....	....	....	1.25	....	1.20
5	1.05	1.20	1.35	1.50	1.40	1.25	....	....	....	....	....	....	....	....	1.30	....	1.25
5	1.10	1.25	1.40	1.55	1.50	1.35	....	....	....	....	....	....	....	....	1.35	....	....
5	1.15	1.30	1.45	1.60	....	1.45	....	....	....	1.35	....	....	....	....	1.40	....	....
														27 and above	1.35		1.30

THE TEXAS CO.

	Feb.	March			April			May			July		Sept.
	31	14	13	21		15	20	8	18	22	15		1
)	1.15	1.30	1.15	1.00	Below 24	.60	.40	.60	.70	.80	.85	.....	....
)	1.25	1.40	1.25	1.10	24 to 25.9	1.00	....	....	....	....	1.05	24 to 24.9	1.15
)	1.35	1.50	1.35	1.20	26 and above	1.30	....	....	....	....	1.35	25 to 25.9	1.20
5	1.40	1.55	1.40	1.25								26 to 26.9	1.25
)	1.45	1.60	1.45	1.30								27 and above	1.30

Wooster	1.40	1.50
Illinois	1.37	....
Indiana	1.38	....
Princeton	1.37	....
Plymouth	.75	....
Waterloo	.75	.90

Western—	1	20
36 and above	1.30	1.40
33 to 35.9	1.20	1.30
32.9 and below	1.10	1.20
Cumberland, Barren, Monroe Counties	1.70	....

MEXICO

	January	
	1	15
*Tuxpam (Mex. ports)	1.15	1.35
†Panuco (Mex. Ports)	.95	1.25
Tuxpam (New York)	1.72	1.90
Panuco (New York)	1.38	1.70
*Plus tax of	.30	.30
†Plus tax of	.19	.19

Mexican crude prices are based on contracts. Dat
the issues of The Oil and Gas Journal in which the ne

CALIFORNIA CRUDE PRICES

			Rosecrans-Dominguez		Santa Fe Springs		Long Beach		Inglewood Torrance		Huntington, Brea Olinda and Richfield		Whittier La Habra		Montebello		Coyote		Lost Hills		Coalinga	
1	Feb. 2	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 2	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27
)	$1.25	.....	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$ .90	$ .75	$ .90	$ .75
)	1.25	.....	.87	1.00	.85	1.02	.87	1.02	.87	1.02	.87	1.00	.85	1.00	.85	1.00	.85	.90	.75	.90	.75
)	1.25	.....	.90	1.00	.85	1.04	.90	1.04	.90	1.04	.90	1.00	.85	1.00	.85	1.00	.85	.90	.75	.90	.75
)	1.25	.....	.94	1.00	.85	1.06	.94	1.06	.94	1.06	.94	1.00	.85	1.00	.85	1.00	.85	.90	.75	.90	.75
)	1.25	.....	.98	1.00	.85	1.08	.98	1.08	.98	1.08	.98	1.00	.85	1.00	.85	1.00	.85	.90	.75	.90	.75
)	1.25	.....	1.02	1.00	.85	1.10	1.02	1.10	1.02	1.10	1.02	1.00	.85	1.00	.85	1.00	.85	.90	.75	.90	.75
1	1.27	.....	1.06	1.01	.87	1.12	1.06	1.12	1.06	1.12	1.06	1.01	.87	1.01	.87	1.02	.88	.94	.79	.91	.79
2	1.30	.....	1.10	1.02	.89	1.14	1.10	1.14	1.10	1.14	1.10	1.02	.89	.102	.89	1.04	.94	.98	.84	.92	.84
3	1.33	.....	1.14	1.03	.91	1.16	1.14	1.16	1.14	1.16	1.14	1.03	.91	1.03	.91	1.08	1.00	1.02	.92	.93	.89
5	1.36	.....	1.18	1.05	.94	1.18	.....	1.18	.....	1.18	.....	.....	.....	1.05	.94	1.12	1.06	1.06	1.00	.95	.94
7	1.40	.....	1.22	1.07	.97	1.22	.....	1.22	.....	1.22	.....	.....	.....	1.07	.97	1.16	1.12	1.10	1.08	.99	.....
)	1.44	.....	1.26	1.10	1.05	1.26	.....	1.26	.....	1.26	.....	.....	.....	1.09	1.00	1.20	1.18	1.16	.....	1.04	.....
3	1.48	$1.30	.....	1.16	1.13	1.30	.....	1.30	.....	1.30	.....	.....	.....	1.11	1.03	1.24	.....	1.24	.....	1.09	.....
3	1.52	1.34	.....	1.22	1.21	1.34	.....	1.34	.....	1.34	.....	.....	.....	1.13	1.06	1.30	.....	1.32	.....	1.14	.....
)	1.56	1.38	.....	1.28	.....	1.38	.....	1.38	.....	1.38	.....	.....	.....	1.16	1.09	1.36	.....	1.40	.....	1.19	.....
2	1.60	1.42	.....	1.34	.....	1.42	.....	.....	.....	1.42	.....	.....	.....	.....	1.22	1.15	.....	1.48	.....	1.24	.....
5	1.64	1.46	.....	1.40	.....	1.46	.....	.....	.....	1.48	.....	.....	.....	.....	.....	.....	.....	1.56	.....	1.29	.....
	1.68	1.52	.....	1.46	.....	1.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.64	.....	1.34	.....
	1.72	1.58	.....	1.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.72	.....	1.39	.....
	1.76	1.64	.....	1.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.80	.....	1.44	.....
	1.80	1.70	.....	1.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.88	.....	1.49	.....
	1.85	1.76	.....	1.76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.54	.....
3*	1.92*	1.84	.....	1.84	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2*	2.00*	1.92	.....	1.92	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3*	2.08*	2.00	.....	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1*	2.16*	2.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
0*	2.24*	2.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3*	2.32*	2.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2*	2.40*	2.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

y, 35 gravity quotation being maximum for all other districts.

ATLANTIC OIL PRODUCING CO.

	January				Feb.	March		April		May				June	July	August	
	1	19	23	30	14	13	21	14	15	18	5	8	14	22	23	16	27	28
	.70	....	.95	1.15	1.40	....	....	....	1.25	....	....	....	....	....	....	1.35	....	1.20
	.90	....	1.15	1.35	1.60	....	....	....	1.45	....	....	....	....	....	....	1.55	....	1.40
								....	....	....	.40	....	....	....	....	.90	....	....
	....	....	....	....	....	....	....	....	....	....	.60	....	....	....	....	.95	....	....
	....	....	....	....	....	....	....	....	.60	.40	....	.60	.70	.80	.90	....	.85	....
	....	....	....	....	....	....	....	....	1.00	1.10	....	....	....	....	....	1.15	....	....
	.85	.65	1.00	1.15	1.30	1.15	1.00	.80										
	.95	....	1.10	1.25	1.40	1.30	1.15	....	....	1.20	....	....	....	....	....	1.25	....	1.20
	.95	1.05	1.20	1.35	1.50	1.40	1.25	....	....	....	....	....	....	....	....	1.30	....	1.25
	.95	1.10	1.25	1.40	1.55	1.50	1.35	....	....	....	....	....	....	....	....	1.35	....	....
	.95	1.15	1.30	1.45	1.60	....	1.45	....	....	....	1.35	....	....	....	....	1.40	....	....
															27 and above		1.35	1.30

THE TEXAS CO.

	January				Feb.	March			April		May			July		Sept.
	1	20	23	31	14	13	21		15	20	8	18	22	15		1
....	.85	....	1.00	1.15	1.30	1.15	1.00	Below 24	.60	.40	.60	.70	.80	.85	.....	....
....	.95	....	1.10	1.25	1.40	1.25	1.10	24 to 25.9	1.00	....	....	....	....	1.05	24 to 24.9	1.15
....	.95	1.05	1.20	1.35	1.50	1.35	1.20	26 and above	1.30	....	....	....	....	1.35	25 to 25.9	1.20
....	.95	1.10	1.25	1.40	1.55	1.40	1.25								26 to 26.9	1.25
....	.95	1.15	1.30	1.45	1.60	1.45	1.30								27 and above	1.30

Co. of Louisiana.

Wooster . . . . .
Illinois . . . . .
Indiana . . . . .
Princeton . . . . .
Plymouth . . . . .
Waterloo . . . . .

Western—
36 and above . . .
33 to 35.9 . . . . .
32.9 and below . .
Cumberland, Barr

*Tuxpam (Mex. p
†Panuco (Mex. P
Tuxpam (New Yo
Panuco (New Yor
*Plus tax of ....
†Plus tax of ....

Mexican crud
the issues of The

CALIFORNIA CRUDE PRICES

			Rosecrans-Dominguez		Santa Fe Springs		Long Beach		Inglewood Torrance		Huntington, Brea Olinda and Richfield		Whittier La Habra		Montebello		Coyote	
Jan. 1	Feb. 2	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27
$1.00	$1.25	.....	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85
1.00	1.25	.....	.87	1.00	.85	1.02	.87	1.02	.87	1.02	.87	1.00	.85	1.00	.85	1.00	.85	1.00	.85
1.00	1.25	.....	.90	1.00	.85	1.04	.90	1.04	.90	1.04	.90	1.00	.85	1.00	.85	1.00	.85	1.00	.85
1.00	1.25	.....	.94	1.00	.85	1.06	.94	1.06	.94	1.06	.94	1.00	.85	1.00	.85	1.00	.85	1.00	.85
1.00	1.25	.....	.98	1.00	.85	1.08	.98	1.08	.98	1.08	.98	1.00	.85	1.00	.85	1.00	.85	1.00	.85
1.00	1.25	.....	1.02	1.00	.85	1.10	1.02	1.10	1.02	1.10	1.02	1.00	.85	1.00	.85	1.00	.85	1.00	.85
1.01	1.27	.....	1.06	1.01	.87	1.12	1.06	1.12	1.06	1.12	1.06	1.01	.87	1.01	.87	1.02	.88	1.02	.88
1.02	1.30	.....	1.10	1.02	.89	1.14	1.10	1.14	1.10	1.14	1.10	1.02	.89	.102	.89	1.04	.94	1.04	.94
1.03	1.33	.....	1.14	1.03	.91	1.16	1.14	1.16	1.14	1.16	1.14	1.03	.91	1.03	.91	1.08	1.00	1.08	1.00
1.05	1.36	.....	1.18	1.05	.94	1.18	.....	1.18	.....	1.18	.....	.....	.....	.....	.....	1.05	.94	1.12	1.06
1.07	1.40	.....	1.22	1.07	.97	1.22	.....	1.22	.....	1.22	.....	.....	.....	.....	.....	1.07	.97	1.16	1.12
1.10	1.44	.....	1.26	1.10	1.05	1.26	.....	1.26	.....	1.26	.....	.....	.....	.....	.....	1.09	1.00	1.20	1.18
1.13	1.48	$1.30	.....	1.16	1.13	1.30	.....	1.30	.....	1.30	.....	.....	.....	.....	.....	1.11	1.03	1.24	.....
1.16	1.52	1.34	.....	1.22	1.21	1.34	.....	1.34	.....	1.34	.....	.....	.....	.....	.....	1.13	1.06	1.30	.....
1.19	1.56	1.38	.....	1.28	.....	1.38	.....	1.38	.....	1.38	.....	.....	.....	.....	.....	1.16	1.09	1.36	.....
1.22	1.60	1.42	.....	1.34	.....	1.42	.....	.....	.....	1.42	.....	.....	.....	.....	.....	.....	1.22	1.15	.....
1.25	1.64	1.46	.....	1.40	.....	1.46	.....	.....	.....	1.48	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.28	1.68	1.52	.....	1.46	.....	1.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.31	1.72	1.58	.....	1.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.34	1.76	1.64	.....	1.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.37	1.80	1.70	.....	1.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.40	1.85	1.76	.....	1.76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.46*	1.92*	1.84	.....	1.84	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.52*	2.00*	1.92	.....	1.92	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.58*	2.08*	2.00	.....	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.64*	2.16*	2.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.70*	2.24*	2.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.76*	2.32*	2.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1.82*	2.40*	2.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

apply to Rosecrans Field only, 35 gravity quotation being maximum for all other districts.

ster	1.40	1.50	....	1.70	1.95	2.25	....	....	2.15	2.25	2.35	2.25	2.00	....
ois	1.37	....	1.47	1.62	1.87	2.12	....	2.02	....	....	2.12	....	1.87	....
ana	1.38	....	1.48	1.63	1.88	2.13	....	2.03	....	....	2.13	....	1.88	1.78
ceton	1.37	....	1.47	1.62	1.87	2.12	....	2.02	....	....	2.12	....	1.87	....
nouth	.75	....	1.00	1.15	1.40	1.65	....	1.55	....	....	1.65	....	1.40	....
erloo	.75	.90	....	1.00	....	....	1.20	1.10	....	....	....	....	1.00	....

KENTUCKY

Western—	January					February		June	July	August			October		Nov.
	1	20	23	24	28	13	14	6	11	17	28	29	14	17	23
nd above	1.30	1.40	....	1.55	1.80	....	2.05	....	2.15	....	1.90	....	....	1.80	....
o 35.9	1.20	1.30	....	1.45	1.70	....	1.95	....	2.05	....	1.80	....	....	1.70	....
and below	1.10	1.20	....	1.35	1.60	....	1.85	....	1.95	....	1.70	....	....	1.60	....
berland, Barren, Monroe Counties	1.70	....	1.95	....	2.20	2.45	....	2.60	....	2.45	....	2.35	2.20	....	2.35

MEXICO

	January		May	June	Nov.
	1	15	21	15	26
xpam (Mex. ports)	1.15	1.35	1.20	1.45	1.75
uco (Mex. Ports)	.95	1.25	1.10	1.25	1.45
pam (New York)	1.72	1.99	1.75	2.00	2.25
uco (New York)	1.38	1.76	1.54	1.67	1.82
s tax of	.30	.30	.30	.33	.30.45
s tax of	.19	.19	.19	.20	.16.94

Mexican crude prices are based on contracts. Dates of changes above refer to issues of The Oil and Gas Journal in which the new prices first appeared.

CANADA

	January				Mar.	July	August	
	1	22	23	31	24	11	21	28
Oil Springs	2.30	2.40	2.55	2.80	2.70	2.80	2.70	2.45
Petrolia	2.23	2.33	2.48	2.73	2.63	2.73	2.63	2.38

RICES

Coyote		Lost Hills		Coalinga		Midway-Sunset Elk Hills		McKittrick, Kern River and Newhall		Wheeler Ridge		Santa Maria		Ventura County		Salt Lake	
ept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27	Sept. 22	Oct. 27
$1.00	$ .85	$ .90	$ .75	$ .90	$ .75	$ .90	$ .75	$ .90	$ .75	$ .90	$ .75	$1.00	$ .85	$1.00	$ .85	$1.00	$ .85
1.00	.85	.90	.75	.90	.75	.90	.75	.90	.75	.90	.75	1.00	.85	1.00	.85	1.00	.85
1.00	.85	.90	.75	.90	.75	.90	.75	.90	.75	.90	.75	1.00	.85	1.00	.85	1.00	.85
1.00	.85	.90	.75	.90	.75	.90	.75	.90	.75	.90	.75	1.00	.85	1.00	.85	1.00	.85
1.00	.85	.90	.75	.90	.75	.90	.75	.90	.75	.90	.75	1.00	.85	1.00	.85	1.00	.85
1.00	.85	.90	.75	.90	.75	.90	.75	.90	.75	.90	.75	1.00	.85	1.00	.85	1.00	.85
1.02	.88	.94	.79	.91	.79	.94	.79	.....	.....	.91	.78	1.02	.89	1.02	.89	.....	.....
1.04	.94	.98	.84	.92	.84	.98	.84	.....	.....	.92	.81	1.02	.93	1.05	.93	.....	.....
1.08	1.00	1.02	.92	.93	.89	1.02	.92	.....	.....	.93	.84	1.08	.98	1.08	.98	.....	.....
1.12	1.06	1.06	1.00	.95	.94	1.06	1.00	.....	.....	.95	.87	1.11	1.03	1.11	1.03	.....	.....
1.16	1.12	1.10	1.08	.99	.....	1.10	1.08	.....	.....	.97	.90	1.15	1.08	1.15	1.08	.....	.....
1.20	1.18	1.16	.....	1.04	.....	1.16	.....	.....	.....	.99	.93	1.19	1.13	1.19	1.13	.....	.....
1.24	.....	1.24	.....	1.09	.....	1.24	.....	.....	.....	1.01	.96	1.23	1.18	1.23	1.18	.....	.....
1.30	.....	1.32	.....	1.14	.....	1.32	.....	.....	.....	1.03	.99	1.27	1.23	1.27	1.23	.....	.....
1.36	.....	1.40	.....	1.19	.....	1.40	.....	.....	.....	.....	.....	1.31	1.28	1.31	1.28	.....	.....
1.15	.....	1.48	.....	1.24	.....	1.48	.....	.....	.....	.....	.....	1.35	1.33	1.35	1.33	.....	.....
....	.....	1.56	.....	1.29	.....	1.56	.....	.....	.....	.....	.....	1.39	1.38	1.39	1.38	.....	.....
....	.....	1.64	.....	1.34	.....	1.64	.....	.....	.....	.....	.....	.....	.....	1.43	.....	.....	.....
....	.....	1.72	.....	1.39	.....	1.72	.....	.....	.....	.....	.....	.....	.....	1.47	.....	.....	.....
....	.....	1.80	.....	1.44	.....	1.80	.....	.....	.....	.....	.....	.....	.....	1.51	.....	.....	.....
....	.....	1.88	.....	1.49	.....	1.88	.....	.....	.....	.....	.....	.....	.....	1.55	.....	.....	.....
....	.....	.....	.....	1.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.60	.....	.....	.....
....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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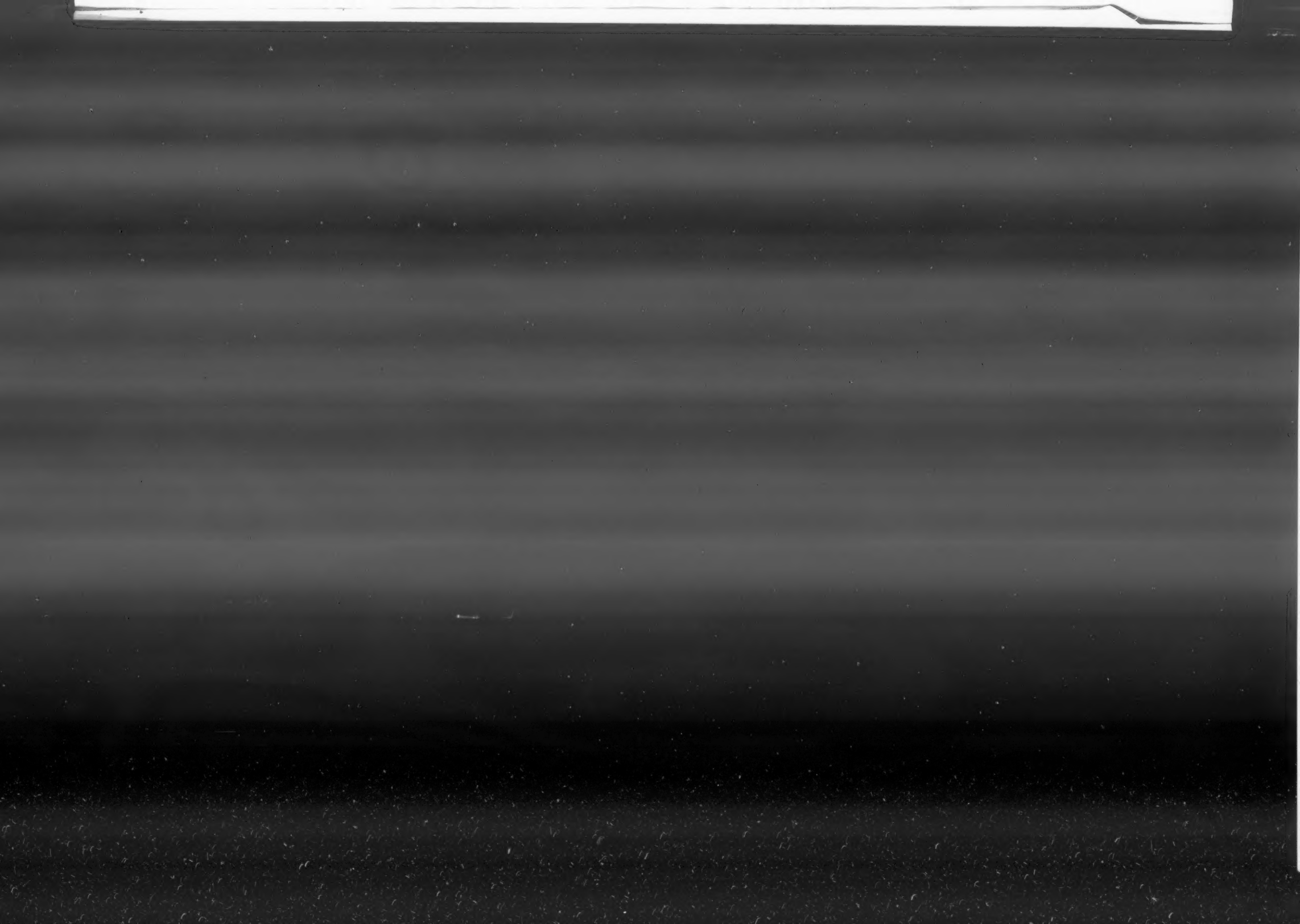


Refinery Prices Higher During 1925

Manufacturing End of Industry Secured More for Their Plant Output Than Any Yearly Period Since 1922. Sensational Advance in Natural Gasoline

By C. O. Willson

The year 1925 in refined markets brought higher average prices on most products than any yearly period since 1922. Not only did the refiners recover from the disastrous prices of 1924—the lowest in gasoline and several other products since 1915—but considering all products, the prices were higher than in 1923.

This greater return for their plant output, although partially offset by higher crude prices in most areas, enabled many refiners to report a more prosperous year than during 1923 and 1924. Crude prices although higher in 1925 did not fluctuate as widely and this fact enabled the refiners to maintain a relatively steadier market in the products they manufactured.

The accompanying Table 1 shows the relative yearly situation which has existed during 1923, 1924 and 1925 in the principal refined products and representative grades of crude oil. The weighted average prices on gasoline, natural gasoline, kerosene and distillate, fuel oil, lubricants and wax should not be taken as representing the average prices obtained by refiners at their plants. The weighted average prices were secured by taking the weekly quotations of The Oil and Gas Journal for the three years as shown in tables in the insert opposite this page. Some of these quotations included the transportation to the point of delivery. Also in some instances the prices include the cost of the containers. For instance, in arriving at the weighted gasoline prices, not only were the Mid-Continent f. o. b. refinery prices in tank cars considered but also the export prices in tankers as well as cases and barrels at coastal points. The 1925 averages take into consideration the California prices on refined products but not in 1924 and 1923.

It will be found, however, that the actual average prices at the refineries for the three years will in most instances show practically the same average relationship as when weighted averages are not considered. Rare instances can be pointed out where refiners in one area have been able to maintain a relatively high price for a certain product but generally an advance or decline in one area is followed by similar changes for the same grade product in other areas when considered over a period of a year.

The crude prices are based on 36 gravity crude in the Mid-Continent, Pennsylvania crude in New York Transit lines and 25 gravity crude in California. These grades followed the ups and downs of the general changes made in those territories and reflect the relative price situation which has existed during the three years.

Table 1—Weighted Average Prices on Principal Refined Products for 1923, 1924 and 1925

Year—	Refinery Gasoline	Natural Gasoline	Kerosene Distillate	Fuel Oil	Lubricants	Wax
1925	13.26c	12.01c	6.71c	$1.50.52	17.44c	5.64c
1924	10.95	8.91	6.78	1.41.9	17.98	4.86
1923	12.98	8.65	6.3	1.34.96	17.1	2.89

All products quoted on a per gallon basis with the exception of fuel oil (barrel) and wax (pound).

Average Daily Price of Representative Grades of Crude Oil for 1923, 1924 and 1925

Year—	Mid-Continent	Pennsylvania	California
1925	$1.87	$3.50	$1.35
1924	1.63	3.60	1.06
1923	1.56	3.33	.74

Mid-Continent price based on crude of 36 Baume gravity as posted by the Prairie Oil & Gas Co. The Pennsylvania oil is based on quotations of the Joseph Seep Purchasing Agency for crude in New York Transit Lines. The California price covers Long Beach of 25 degrees gravity.

Refinery Gasoline

It will be noted, in regard to gasoline, that the weighted figure of 13.26 cents is 2.31 cents greater than the average of 10.95 for 1924 and .28 cents greater than the 12.98-cent average for 1923. These higher prices prevailed despite the fact that gasoline prices in 1925 did not reach as high levels as they did in 1923.

Gasoline price trends early in 1925 closely followed those of 1924 and 1923. Refiners boosted their quotations early in the year when crude prices were advanced. By late February and March the market had begun to slump due to the heavy accumulation of stocks and the fact that refinery output continued to exceed the demand during the winter period of minimum consumption.

It appeared late in March that the gasoline market would practically duplicate the price trend of the previous two years. It will be recalled that in those two years gasoline prices, due to an overproduction, experienced a steady slump from early spring until late fall.

Early Spring Helps

However, a warm spring which brought an unexpectedly early gasoline consumption came to the rescue of the gasoline market. Due to this condition gasoline demand mounted so that in many consuming areas the actual consumption was 25 to 40 per cent greater in April and early May than it was in the same period of 1924. This not only aided the domestic demand but brought about a condition in which several of the major organizations were forced to buy heavily for export movement.

In this connection one of the most important aids was the purchase by the Standard Oil Co. of New Jersey of large quantities of gasoline from Mid-Continent refiners early in May. The Mid-Continent refiners, as usual, had been the first to feel the effect of overproduction and its gasoline markets had been slumping for several weeks. The New Jersey company bought both on the open market and on contracts which extended over the remainder of the year. It is estimated that these purchases totaled approximately 125,000,000 gallons from May until the end of the year. Other export buyers were also active.

The net result of this development was that the decline in gasoline prices was stopped the latter part of April and in contrast to 1924 and 1923 trends, advanced for several weeks. In Oklahoma, for instance, the 58-60 U. S. Motor gasoline slumped from a high of 13 cents on February 17 to a low of 9¼ cents on April 14. Then with the export buying and a better domestic demand the market advanced to 12½ cents on June 9.

Although there was a distinct let-up in export buying during June and July refiners, due to heavy domestic demands, were able to maintain a fairly firm market during the two months. Beginning late in July, however, refiners began reducing their gasoline stocks and, despite a record-breaking consumption in August, the market declined. In Oklahoma this meant a decline from 12½ cents on U. S. Motor gasoline on July 14 to 8¼ cents on September 8.

An excellent fall demand again reversed the market trend again slightly. With minor fluctuations during the period the U. S. Motor grade in Oklahoma again reached 10¼ cents the latter part of November. December was a slow month and prices had declined to 9½ cents when the year ended.

Other Areas Same

North Texas and other refining areas in the Mid-Continent experienced practically the same market trend as Oklahoma. The same is true of Pennsylvania markets. Gasoline prices in the coastal areas, including California, no not fluctuate as rapidly as the constantly changing tank car markets of the independent refiners located at interior points. A study of the table opposite this page will show that the domestic and export market in New York and California followed in a general way the ups and downs of the Mid-Continent and Pennsylvania market.

It will be noted in comparing the average prices for the three years that the advances in the higher gravity grades of gasoline during 1925 were greater than the U. S. Motor and other lower gravity grades. In North Texas the average price on U. S. Motor in 1925 was 1.6 cents higher than in 1924, but the advance in the 64-66, 390 grade was 2.12 cents. In Oklahoma the average advance in U. S. Motor gasoline was 1.59 cents, 2.12 cents in the case of 64-66, 375 and 2.08 cents in the case 68-70, 350 gasoline.

These relatively large advances for the higher grades was due to two developments. In the first place, as previously explained, there was, over the greater part of 1925, a much better export demand in the Mid-Continent. The bulk of this demand was for grades higher in gravity than 58-60 U. S. Motor gasoline. This naturally brought about a situation in which the refiners were able to secure more for the high gravity cuts.

Natural Gasolines Advance

Of more importance, however, were the high prices which prevailed for all grades of natural gasoline. As shown in the tables opposite this page, natural gasoline manufacturers in 1925 had one of the best years in their history. Not only were average prices approximately 50 per cent higher than in 1924 or 1923 but they were also relatively high when compared to refinery gasolines. A great amount of natural gasoline is used at many refineries in the manufacture of gasoline meeting export specifications for the high gravity grades. With the high prices prevailing for the natural gasoline, refiners naturally sought and obtained more for their higher gravity grades. Due to the high natural gasoline prices very little refinery gasoline of 68-70 gravity was offered to the trade, the refiners finding it advantageous to keep that cut in their plants to blend with the lower gravities.

Grade A natural gasoline in Oklahoma brought an average price of 12.02 cents during 1925. The average price in 1924 for the same grade was 8.66 cents and 9.13 cents in 1923. In North Texas the prices for the same grade for 1925, 1924 and 1923 were 11.99, 8.53 and 8.85 cents.

The California market in natural gasolines has been even stronger than east of the Rocky Mountains. There, the refiners in competing with another in the retailing of gasolines have been selling the higher gravities to the West Coast consumers. Very little gasoline of these grades is obtainable in straight refinery distillation and the refiners have been bidding actively for the natural gasoline. As shown in the table the absorption grade brought an average price of 12.81 cents in 1925 and the compression grade 13.07 cents.

Kerosene

As shown in Table 1, gasoline prices for the entire industry were slightly lower this year than last. The only exception were several New York export grades which were a little higher in 1925 than in 1924. Prices were generally higher on all grades in 1925 than in 1923.

Kerosene prices in 1925 at their peak were not as high as in 1924 but the prices for the two years were practically the same. Ordinarily the peak kerosene prices in the domestic market comes in January or in March or April when the spring demand for tractors and other farm uses is maximum. During the greater part of 1924 kerosene stocks accumulated from month to month and this tended to prevent any rapid advances early in 1925.

In the Mid-Continent, the average price on 41-43 water white kerosene in Kansas for 1925 was 4.67 cents. This was .16 cents lower than the 4.83-cent average for 1924, but .31 cent higher than the average for 1923. Comparing prices for North Louisiana, Arkansas, North Texas and Oklahoma and the same relative situation will be found. In Pennsylvania, the average reduction the past year was practically the same. The statistical situation in regard to kerosene improved the latter part of 1925 reflected in the fact that the market has been very strong so far this year with higher prices prevailing than at any time in 1925.

Distillates and Gas Oil

Distillates and gas oils although they are products used ordinarily for different purposes, are usually manufactured in much the same manner at refineries. Changes in the prices of one always affects the other and for that reason they can be considered together. The price trend in both products is upward. In Oklahoma the average price of 38-40 straw distillate in 1925 was 3.68 cents, 3.5 cents in 1924 and 3.05 cents in 1923. Gas oil for the same area was 3.27 cents in 1925, 2.9 cents in 1924 and 2.66 cents in 1923. The same trend is apparent when prices are compared for the same products in all parts of the country.

The explanation in the case of distillates lies in the increased demand for all grades as fuel for domestic burners. The actual consumption has shown a steady climb. However, many refiners and distributors had expected higher prices than materialized during the past year.

Supplies were adequate in all areas even during the coldest weather of the winter. This prevented any over night advances in distillates but at the same time tended to give a steady market throughout the year.

Probably the most important explanation of the higher gas oil prices lies in the increasing number of cracking installations at refineries. This is also a factor in the distillate price since a part or the whole of the distillate cut at most refineries is suitable material for cracking provided market conditions justify this additional refining. In the case of gas oil an increasing number of refiners with cracking installations never offer gas oil to customers as they find it more profitable to crack the product and secure a larger recovery of gasoline. Many have also bought the gas oil from other refiners. The higher prices are therefore the logical result of an increased demand.

Fuel Oils

This same factor of cracking is also partially responsible for the advance in fuel oil prices during the past year. The weighted average price of fuel oil for all refining areas in 1923 was $1.3496 per bbl.; 1924, $1.419 and $1.5052 in 1925. The advance during the past year is especially noteworthy when the crude production situation is considered. The bulk of the increased crude oil production during the past year came from the heavy Smackover fields of Arkansas with large

(Continued on Page 254)

Chronology of 1925 Crude Prices

Prices Advanced Early in the Year in Practically All Fields. Last Six Months Witnessed General Reductions

Following are the crude price changes for the year 1925. The date and amount of the changes together with the name of the companies posting the prices are given for all fields in the United States. The changes in table form will be found in the insert between pages 124 and 125.

January 3.—The Ohio Oil Co. advanced Wooster crude 10 cents and Waterloo crude 15 cents.

January 19.—Atlantic Oil Producing Co. changed from two to five price schedules for Smackover, Ark., crude, reducing the price of crude below 25 gravity 20 cents and advancing the higher gravities from 10 to 20 cents.

January 20.—Standard Oil Co. of Louisiana changed from two to five price schedules for Smackover, Ark., crude with advances from 10 to 20 cents in the higher gravities. The Smackover change was met by The Texas Co. The Indian Refining Co. and the Paragon Development Co. advanced the three grades of Western Kentucky crude 10 cents.

January 22.—The Marland Refining Co. rearranged its schedule for Oklahoma crude and increased its prices from 33 to 42 cents. The Prairie Oil & Gas Co. added a new gravity, 39 and above, and increased its prices from 25 to 40 cents. Sinclair Crude Purchasing Co. and The Texas Co. met the Prairie schedule. The Humble Oil & Refining Co. raised its posted price on Mexia, Powell, Wortham, Currie and Richland crudes 25 cents a barrel and met the Prairie schedule on Ranger and North Texas crude, adding the extra gravity and raising the prices 25 to 40 cents. The Humble did not add the new gravity to Moran crude, but posted an advance of 25 cents for 36 and above. The Texas Co., in addition to meeting the Prairie schedule, advanced the price of Currie, Powell, Mexia and Wortham crude 25 cents. The Ohio Oil Co. advanced the price of Lima, Indiana, Illinois and Princeton crudes 10 cents, and Plymouth crude 25 cents. The Imperial Oil Co., Ltd., increased Oil Springs and Petrolia, Canada, crudes 10 cents.

January 23.—The following price increases were posted throughout the country by the various crude purchasing companies: Smackover, Bellevue and Cotton Valley, 15 cents each, and all other grades in Louisiana and Arkansas, 25 cents each by the Standard Oil Co. of Louisiana; Mexia, Powell, Wortham and Corsicana light, 25 cents each, by the Magnolia Petroleum Co.; all Pennsylvania grades, Cabell, Somerset medium and Somerset light, 25 cents each, Ragland, 15 cents and Corning 20 cents, by the Joseph Seep Purchasing Agency; Grass Creek light, Elk Basin, Big Muddy, Lance Creek and Rock Creek, 25 cents each by the Ohio Oil Co. and Osage, Cat Creek, Salt Creek, Lost Soldier, Greybull and Torchlight, 25 cents each, by the Midwest Refining Co.; Sunburst in Montana, 25 cents, by the Ohio Oil Co.; Lima, Indiana, Illinois, Princeton and Plymouth crudes, 15 cents each, and Waterloo, 10 cents, and Wooster, 20 cents, by the Ohio Oil Co.; Oil Springs and Petrolia, Canada, crudes, 10 cents, by the Imperial Oil Co., Ltd. The Magnolia Petroleum Co. met the Prairie Oil & Gas Co.'s increase on all grades in Oklahoma, Kansas and Texas above 32.9 degrees and rearranged its schedule for the lower gravities.

January 24.—The Indian Refining Co. raised the price of three grades of Western Kentucky crude 15 cents a barrel.

January 26.—The Paragon Development Co. increased the price of Cumberland, Monroe and Barren crudes in Kentucky 25 cents, effective January 23. The same company also increased the three grades of Western Kentucky crude 15 cents each, effective January 24.

January 27.—The Sinclair Crude Oil Purchasing Co. added a new gravity, 41.6 and above, to its schedule for Mid-Continent crude, advancing the price for that gravity 25 cents.

January 29.—Humble Oil & Refining Co. advanced all grades of Gulf Coast crude 25 cents. Same advance made by other purchasing companies.

January 30.—The Prairie Oil & Gas Co. revised its gravity schedule to include six grades and advanced its prices 15 cents to 25 cents. The Sinclair Oil & Gas Co. met the Prairie raise with advances of 10 cents to 25 cents, the new Sinclair schedule being the same as the Prairie except that the top gravity of the Sinclair schedule remains 41.6 degrees and above, while the Prairie top gravity is 42 degrees and above. Standard Oil Co. of Louisiana advanced Bellevue crude 25 cents, Smackover and Cotton Valley 15 cents each and all other grades in Louisiana and Arkansas 20 cents. The Atlantic Oil Producing Co. met this advance in Homer, Haynesville and Smackover fields and posted advances of 10 and 25 cents in Stephens crude. The Humble Oil & Refining Co. advanced Currie, Richland and Powell crudes 30 cents each; Mexia and Wortham crudes 20 cents each; Moran 15 to 20 cents, and met the Prairie schedule both as to gravity and price in Ranger and North Texas. The Gulf Production Co. met the Humble advance in Powell, Corsicana and Richland fields, and advanced Mexia and Wortham crudes 25 cents each, 5 cents above the Humble price. The Magnolia Petroleum Co. met the Prairie advance in Oklahoma, Kansas and Texas, increasing its prices 15 to 35 cents. The Texas Co. met all advances.

The Kay County Gas Co. (Marland) posted a price of $2 for Tonkawa, Okla., crude, an increase of 29 cents, effective January 30. The Bolene Refining Co. and Champlin Refining Co., both of Enid, Okla., met the Marland advance January 31, raising their posted prices to $2.

The Marland advance is from 12 to 29 cents. The new schedule follows: 30 to 32.9 degrees, $1.40; 33 to 35.9 degrees, $1.55; 36 to 38.9 degrees, $1.70; 39 to 41.5 degrees, $1.85; 41.6 degrees and above, $2.

The Texhoma Oil & Refining Co., the American Oil & Refining Co. and the Panhandle Refining Co., all of Wichita Falls, Tex., were reported to be paying a premium of 15 cents for North Texas crude.

January 31.—The Joseph Seep Purchasing Agency advanced all grades of Pennsylvania crude, Cabell, Somerset medium and Somerset light 25 cents and Ragland 15 cents. The Ohio Oil Co. advanced Lima, Indiana, Illinois, Princeton, each. A 25-cent increase for Canadian crudes, Oil Springs and Petrolia, was posted by Imperial Oil, Ltd. The Ohio Oil Co. advanced Elk Basin, Grass Creek light, Lance Creek and Rock Creek 20 cents; Big Muddy, 30 cents; Mule Creek, 40 cents, and Sunburst, Mont., 7 cents. The Midwest Refining Co. posted advances of 20 cents in Salt Creek, Grass Creek, Elk Basin, Lance Creek, Rock Creek, Osage, Cat Creek, Hamilton Dome, Greybull and Torchlight; 30 cents in Big Muddy; 40 cents in Mule Creek; 7 cents in Sunburst, Mont., and 20 cents in Hogback, N. Mex. The Magnolia Petroleum Co. met the Humble advances in Corsicana light, Mexia and Wortham crudes, raising the former 30 cents and the latter 20 cents each. The Paragon Development Co. advanced Cumberland, Monroe and Warren Counties, Kentucky, crude and three grades Western Kentucky, 25 cents each. The Indian Refining Co. also advanced the latter three grades 25 cents. The Texas Co. advanced Mexia and Wortham crudes 10 cents.

February 2.—The Joseph Seep Purchasing Agency advanced Corning crude 25 cents. The Magnolia Petroleum Co. raised Corsicana heavy crude 10 cents.

February 4.—The Standard Oil Co. of California advanced its prices for California crude 25 to 58 cents, making the top price, 42 gravity and above, $2.40.

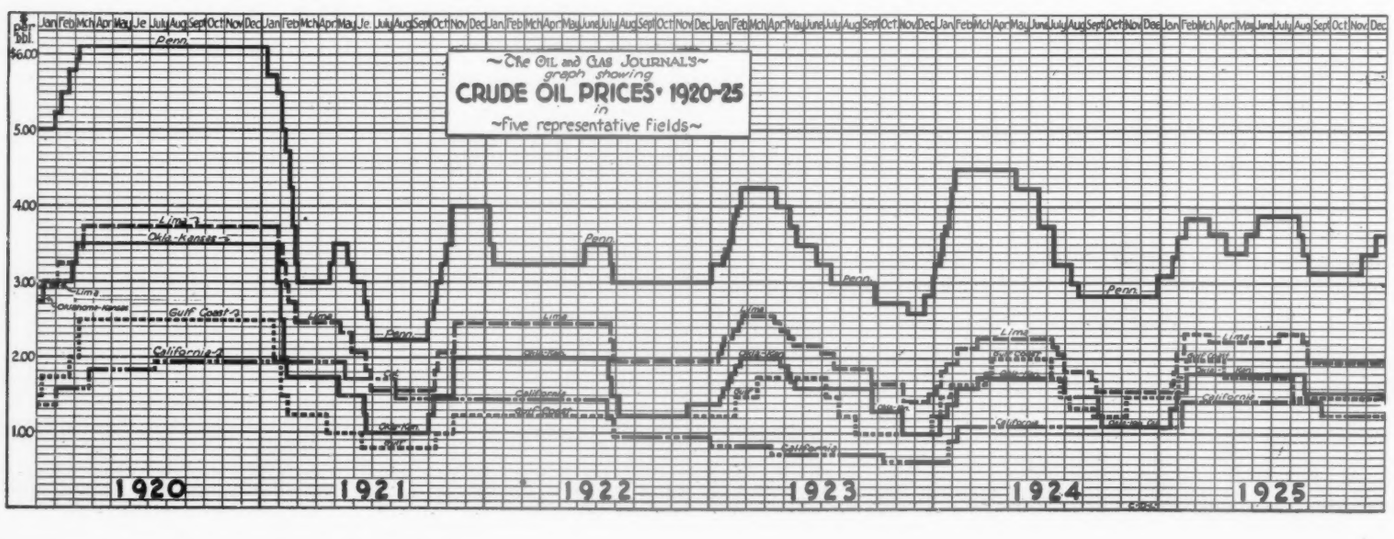
February 5.—The Humble Oil & Refining Co. advanced the price for Mexia and Wortham, Tex., crudes 10 cents to $1.80.

February 6.—The Magnolia Petroleum Co. met the Humble advance in Mexia and Wortham. The Sinclair Oil & Gas Co. posted a 5-cent advance for the top gravity. Mid-Continent crude, 41.6 degrees and above, making the price $2. The Prairie Oil & Gas Co. and The Texas Co. met the advance on their top grades of 42 degrees and above. The Texas Co. also posted a gravity schedule for the Wortham, Mexia, Powell, Richland and other East Central Texas fields, with prices ranging from $1.45 for crude below 32 degrees to $1.80 for crude testing 38 degrees and above.

February 7.—The Gulf Pipe Line Co., Magnolia Petroleum Co., Humble Oil & Refining Co. and other purchasers met the Sinclair advance of 5 cents in Mid-Continent crude.

February 12.—Prairie Oil & Gas Co. and Sinclair Crude Oil Purchasing Co. advanced Mid-Continent crude prices from 20 to 35 cents, making the top price $2.35. The Humble Oil & Refining Co. advanced Gulf Coast crudes 25 cents, making Grade A $2 and Grade B $1.75. Humble also advanced Mexia, Wortham, Powell, Currie and Richland crudes 20 cents to $2, and raised Ranger and North Texas crudes from 20 to 40 cents, meeting the Prairie price on all grades below 36 degrees, while 36 to 38.9 degrees gravity is $2, 5 cents above Prairie, and 39 to 41.9 degrees is $2.25, 15 cents above Prairie, and 42 and above is the same at $2.35. Humble also advanced Moran crude 20 to 30 cents. The Texas Co. met advances.

February 13.—Joseph Seep Purchasing Agency advanced Cabell, Somerset medium and Somerset light 25 cents; Corning 30 cents, and Ragland 10 cents. The Ohio Oil Co. advanced Lima, Indiana, Illinois, Princeton and Plymouth 25 cents, and Wooster crude 30 cents. Imperial Oil, Ltd., advanced Canadian crudes 25 cents. The Magnolia Petroleum Co. advanced Corsicana light, Mexia and Wortham crudes 20 cents and met the Prairie schedule in Oklahoma, Kansas and Texas. The Ohio Oil Co. advanced Big Muddy, Rock Creek and Mule Creek 25 cents; Elk Basin, Grass Creek light and Lance Creek 35 cents, and Sunburst, Mont., 8 cents. The Midwest Refining Co. advanced Salt Creek, Rock Creek, Mule Creek and Big Muddy 25 cents;



Questions That Have Been Asked Us About

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That Will Interest Large and Small Producers

Questions—

(a) How can I, a small producer, benefit by your service

(b) What can you do for a large producing organization which maintains a competent geological department

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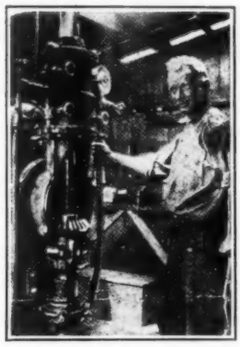

Answers—

(a) Mineral Exploration Company serves the small producer by providing him with a complete, specialized exploration department. Only a few of the stronger companies are able to maintain such departments of their own. Mineral Exploration Company, therefore, makes available to small producers, on a reasonable basis, service and counsel which he could not otherwise command.

(b) To large producers, the Company provides an independent and unprejudiced service to supplement or co-operate with their own exploratory organizations. Its service is complete and can accomplish anything in the nature of exploratory work that any organization could wish.

Mineral Exploration Co. Does This—

SUBSTITUTES certainty for guesswork in the development of your lease;

DEFINITELY locates and outlines the geological structure;

DEFINES the extent of the blind, or partially blind, structures and determines the thickness and character of overlying strata;

INDICATES the most favorable point for setting casing to prevent water encroachment and conserve pressure;

PREVENTS the loss due to drilling "off structure";

PROVIDES data for spacing wells to prevent overdevelopment;

SAVES everybody money, time and risk.

We shall be glad to answer personally any question regarding core drilling

DIAMOND DRILL CORES

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Grass Creek, Elk Basin, Osage, Cat Creek and Hogback, N. Mex., 35 cents. The Paragon Development Co. advanced Cumberland, Monroe and Warren Counties, Kentucky, crude 75 cents. The Grayburg Oil Co. posted a new gravity schedule for Somerset, Texas, crude, prices being made same as Prairie for 33 and above, while below 30 is $1.25 and 30 to 32.0 is $1.35.

February 14.—All grades of Pennsylvania crude were raised 25 cents by the Joseph Seep Purchasing Agency. Three grades of Western Kentucky crude were advanced 25 cents by the Indian Refining Co. and Paragon Development Co. The Standard Oil Co. of Louisiana and The Texas Co. advanced Smackover and Cotton Valley crudes 15 cents each and all other grades in Louisiana and Arkansas 25 cents each. Atlantic Oil Producing Co. advanced Stephens, Ark., crude 25 cents.

February 16.—Ohio Oil Co. advanced Waterloo crude 20 cents, making it $1.20 a barrel.

February 17.—The Prairie Oil & Gas Co., Sinclair Crude Oil Purchasing Co. and Magnolia Petroleum Co. advanced their prices on 36 to 38.9 and 39 to 41.9 gravities 5 cents and 15 cents, respectively, meeting Humble prices in North Texas.

February 18.—Ohio Oil Co. advanced Big Muddy and Rock Creek, Wyoming, crudes 5 cents each, making the prices for those fields $1.60 and $1.70, respectively. The Midwest Refining Co. also posted 5 cent advances in Salt Creek, Rock Creek and Big Muddy crudes.

March 7.—Kevin Sunburst (Montana) crude advanced 20 cents to $1.40 a barrel.

March 10.—Ohio Oil Co. advanced the following Wyoming prices: Grass Creek light and Elk Basin crudes, 15 cents to $2.15; Lance Creek, 20 cents to $2.15; Rock Creek, 30 cents to $2, and Big Muddy, 40 cents to $2. The Ohio Oil Co. advanced the following crude prices: Grass Creek light and Elk Basin, 15 cents to $2.15; Lance Creek, 20 cents to $2.15; Rock Creek, 30 cents to $2; Big Muddy, 40 cents to $2; Osage, 20 cents to $2.15; Cat Creek, 15 cents to $2.15; and Hogback, N. Mex., 15 cents to $2.20.

March 12.—The Standard of Louisiana reduced the price of Cotton Valley and Smackover crudes 15 cents a barrel.

March 13.—Atlantic Oil Producing Co. reduced Smackover crude 5 to 15 cents. The Texas Co. reduced all Smackover crude 15 cents.

March 16.—Ohio Oil Co. advanced Mule Creek crude 25 cents.

March 21.—Standard Oil Co. of Louisiana reduced the price of Cotton Valley and all grades of Smackover crude 15 cents a barrel. Atlantic Oil Producing Co. and The Texas Co. reduced Smackover crude 15 cents.

March 23.—Joseph Seep Purchasing Agency reduced Pennsylvania oil in New York Transit Lines, Bradford district oil in National Transit Lines, Pennsylvania grade oil in Southwest Pennsylvania pipe lines and Pennsylvania oil in National Transit Lines 20 cents a barrel; Pennsylvania grade oil in Eureka Pipe Lines reduced 25 cents a barrel, and Pennsylvania grade oil in Buckeye Pipe Lines reduced 35 cents a barrel.

March 24.—Ohio Oil Co. reduced the price of Lima, Indiana, Illinois, Princeton, Plymouth and Waterloo crude 10 cents a barrel.

March 27.—Standard Oil Co. of Louisiana reduced the price of Cotton Valley crude 10 cents.

April 2.—Joseph Seep Purchasing Agency reduced the price of Corning grade crude in Buckeye Pipe Lines 15 cents a barrel.

April 3.—Ohio Oil Co. reduced the price of Wooster crude 10 cents a barrel.

April 13.—Humble Oil & Refining Co. reduced the price of Grade A and Grade B coastal crude 25 cents a barrel. The Texas Co. reduced Gulf Coast crude 25 cents.

April 14.—Standard Oil Co. of Louisiana reduced the price of Smackover crude below 25 gravity 20 cents a barrel. The Atlantic Oil Producing Co. met reduction.

April 15.—The Texas Co. posts revised Smackover crude gravity schedule posting three grades as follows: Below 24 gravity, 60 cents; 24 to 25.9 gravity, $1, and 26 and above, $1.30. Atlantic Oil Producing Co. reduced Stephens, Ark., crude 15 cents. The same company posted a different gravity for Smackover crude schedule as follows: Below 24 gravity, 40 cents; 24 to 24.9 gravity, $1.10, and 25 to 25.9 gravity, $1.20, leaving the three higher gravities unchanged.

April 16.—Standard Oil Co. of Louisiana reduced the price of Smackover crude below 25 gravity going to storage 30 cents a barrel to 50 cents, leaving crude not to exceed shipping facilities at 80 cents.

April 17.—Joseph Seep Purchasing Agency reduced the price of Gaines, Pa., crude 40 cents a barrel; all other Pennsylvania and Bradford grades 25 cents a barrel, and Somerset crude 15 cents a barrel.

April 18.—Standard Oil Co. of Louisiana posted the following Smackover crude schedule: 27 and above gravity, $1.30; 26 to 26.9, $1.25; 25 to 25.9, $1.20; 24 to 24.9, $1.10, and below 24 gravity, 60 cents on crude for shipment and 40 cents for crude to storage. Gulf Refining Co. followed Standard revision of prices with only one price for Smackover heavy, 40 cents. Standard Oil Co. of Kentucky reduced the prices of Cumberland, Monroe and Barren crudes 15 cents. Atlantic Oil Producing Co. reduced the below 24 Smackover crude 20 cents, but advanced the 24 to 24.9 gravity 10 cents.

April 20.—The Texas Co. reduced below 24 Smackover crude 20 cents.

April 23.—Standard Oil Co. of Louisiana reduced the price of Bellevue crude 25 cents a barrel. Joseph Seep Purchasing Agency reduced the price of Corning crude 15 cents.

April 24.—Standard Oil Co. of Louisiana eliminated the 60-cent price for Smackover crude below 24 gravity to apply for shipment and posted one price of 40 cents a barrel.

May 1.—Producers & Refiners Corp. advanced price of Lost Soldier, Wyo., crude 7 cents a barrel.

May 5.—Atlantic Oil Producing Co. revised below 24 gravity at Smackover to include two schedules, 23 to 23.9 and below 23, posting a price of 60 cents for the former and 40 cents for the latter.

May 8.—Standard Oil Co. of Louisiana advanced the price of Smackover crude below 24 gravity 20 cents a barrel. The Texas Co. advanced below 24 smackover 20 cents.

May 8.—Atlantic Oil Producing Co. combined the two grades of Smackover crude below 24 gravity into one schedule and posted a price of 60 cents.

May 14.—Atlantic Oil Producing Co. advanced the price of below 24 Smackover crude 10 cents.

May 18.—Standard Oil Co. of Louisiana advanced Smackover crude below 24 crude below 24 gravity 10 cents a barrel. The Texas Co. met the advance.

May 20.—Paragon Development Co. advanced Cumberland, Monroe and Barren, Kentucky, crudes 15 cents. Joseph Seep Purchasing Agency advanced Pennsylvania crudes 25 cents, and Gaines, Cabell and Somerset crudes, 15 cents.

May 22.—Standard Oil Co. of Louisiana advanced Smackover crude below 24 degrees 10 cents. The Texas Co. and the Atlantic Oil Producing Co. met the increase.

June 1.—Humble Oil & Refining Co. posted a price of $2 on Lytton Springs, Texas, crude.

June 6.—Joseph Seep Purchasing Agency advanced the price of Pennsylvania crudes 25 cents except Pennsylvania oil in Buckeye Pipe Lines, which was raised 35 cents. Gaines, Cabell and Somerset crudes were increased 15 cents. Paragon Development Co. advanced the price of Cumberland, Monroe and Barren County crudes in Kentucky 15 cents.

June 10.—Joseph Seep Purchasing Agency advanced Corning crude 10 cents.

June 23.—The Shreveport-El Dorado Pipe Line Co. advanced the price of Smackover crude below 24 degrees 10 cents.

June 26.—The Texas Co. advanced the price of 42 gravity and above crude in East and Central Texas 25 cents a barrel. Currie, Powell, Mexia and Wortham crudes are placed on this gravity schedule.

July 6.—Ohio Oil Co. advanced Wooster crude 10 cents.

July 8.—Humble Oil & Refining Co. adopted gravity schedule for Currie, Tex., crude, posting an advance of 25 cents for oil 42 gravity and above. The new schedule is: Below 42 gravity, $2; 42 gravity and above, $2.25. Joseph Seep Purchasing Agency advanced Corning crude 20 cents.

July 10.—Prairie Oil & Gas Co. revised its gravity schedule for Oklahoma, Kansas and North Texas crude, posting advances ranging from 1 to 33 cents on 17 grades. The price for 33 to 33.9 gravity crude, formerly included in the schedule 33 to 35.9 gravity, was unchanged. The new schedule was met by Sinclair Oil & Gas Co. and The Texas Co. The Humble Oil & Refining Co. also adopted the same schedule for Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie and Moran, Texas, crudes. Champlin Refining Co. and Bolene Refining Co. adopted the schedule but added three grades as follows: 45 to 45.9, $2.76; 46 to 46.9, $2.84; 47 to 47.9, $2.92.

July 11.—Magnolia Petroleum Co. adopts Prairie Oil & Gas Co. crude oil schedule from 31 gravity to 44 gravity and above, in Oklahoma and Kansas. Its lower grades, below 28 gravity at $1, and 28 to 30.9 at $1.35, remain unchanged. Ohio Oil Co. advanced the price of Lima, Indiana, Illinois, Princeton, Plymouth and Wooster crude oil 10 cents a bbl. Indiana Refining Co. advanced the three grades of Western Kentucky crude 10 cents a bbl.

July 13.—Magnolia Petroleum Co. adopts the Prairie Oil & Gas Co. crude oil schedule in Texas and places Mexia, Wortham, Corsicana and Lytton Springs crudes on this basis, except its two lower grades. Ohio Oil Co. advanced the price of Sunburst, Mont., crude 15 cents a bbl. Imperial Oil Co. of Canada advanced Petrolia and Oil Springs crude 10 cents a bbl.

July 15.—Standard Oil Co. of Louisiana advanced all grades of Arkansas and Louisiana crude, except Smackover and Cotton Valley, 15 cents. Smackover crudes were advanced 5 cents and Cotton Valley 10 cents. The Texas Co. met this advance and posted an increase of 5 cents on its Smackover prices.

July 16.—Atlantic Oil Producing Co. replaced the two grades, 23 to 23.9 gravity and below 23 gravity, instead of the one grade below 24 on Smackover crude. It posted a price of 95 cents on the 23 to 23.9 gravity and 90 cents on the below 23 grade. It also advanced other Smackover grades 5 cents, Stephens crude 10 cents, and Homer and Haynesville crudes 15 cents.

July 18.—The Texas Co. placed Gulf Coast crude on a gravity basis, dividing this crude into two classes, Grade A and Grade B. A was posted at $1.75 and B at $1.50.

July 20.—Gypsy Oil Co. posted prices on three additional grades of Oklahoma crude below 28 gravity to provide for crude produced in the Bristow, Glenn Pool, Morris and Perryman Fields. The additional grades and the new prices are: 25 to 25.9, $1.16; 26 to 26.9, $1.24; 27 to 27.9, $1.32.

(Continued on Page 252)

EXPORTS OF CRUDE AND REFINED FOR DECEMBER AND 12 MONTHS

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YOK, Feb. 15.—The New York oil export market during 1925 registered a decline in volume compared with 1924. The decline in oil shipments in 1925 as compared with 1924 is attributed to caution on the part of European buyers, which were overstocked at the beginning of the year.

New York oil export prices during 1925 were about the same as in 1924. Motor gasoline in cases ranged between 26.65 cents a gallon and 30.65 cents in 1925, while in 1924 the range was 24.40 to 28.40. The 1925 range was approximately 2 cents a gallon higher than that of the preceding year.

In 1925 the kerosene export market turned upward in September, standard white in cases rising from the year's low of 16.15 cents a gallon to 17.90, an increase of 1¾ cents a gallon.

On September 10, 1925, the Standard Oil Co. of New Jersey discontinued quoting all bulk and barrel export quotations, because of the small amount of open market business done in bulk and barrel gasoline and kerosene.

The following table shows dates and amounts of price changes in the New York gasoline and kerosene export market during 1925, (cents per gallon):

	In Cases		
		Kerosene	
1925—	Gasoline	Standard White	Water White
January 1	26.65	16.90	17.90
January 23	27.65	.....	.....
January 26	28.15	.....	.....
February 3	29.15	.....	.....
February 14	30.15	.....	.....
March 19	29.15	.....	.....
May 13	29.65	.....	.....
May 21	30.15	16.40	17.40
May 26	30.65	.....	.....
August 8	29.65	.....	.....
August 19	28.65	.....	.....
August 22	28.15	16.15	17.15
September 10	27.65	.....	.....
September 19	28.65	.....	.....
October 14	27.15	.....	.....
October 30	.....	16.90	17.90
November 3	.....	17.15	18.15
November 21	.....	17.40	18.40
November 25	.....	17.65	18.65
December 4	.....	17.90	18.90
December 11	.....	.....	19.40
1926—			
February 3	28.15	18.40	19.90

That the present trend in export prices is upward is indicated by the change recorded on February 3, 1926. An identical change in gasoline took place on February 3, 1925, also, that is, an advance of 1 cent a gallon.

The New York oil export market consists largely of cased and barreled oils. It has already been pointed out that cased gasoline shipments about equal bulk exports, while exports of kerosene in cases exceeds shipments in bulk. The bulk of the lubricating oil, lubricating grease and all wax exports are in containers. The reason for this is that the Atlantic Coast offers better facilities for shipment in containers, oil exports of this kind going on cargo vessels which habitually make New York a port of call. Most bulk shipments of oil are handled at Gulf Coast terminals.

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of December		12 Mos. Ended D'c'mb'r	
	1924	1925	1924	1925
Petroleum—crude, gallons	49,430,494	36,821,235	739,404,849	551,246,432
Crude	$1,508,353	$1,672,342	$26,495,011	$24,274,447
Total refined petroleum, gallons	323,816,482	387,471,256	3,922,365,220	3,938,131,052
Petroleum, value	$31,135,519	$39,383,535	$391,978,424	$421,227,283
Gasoline, naphtha, and other light products, gallons	100,691,383	130,797,060	1,186,335,269	1,290,000,337
Gasoline, naphtha, and other light products, value	$13,181,342	$18,600,328	$167,346,637	$197,597,584
Oils, illuminating, gallons	85,948,109	75,681,589	916,351,394	877,080,868
Oils, illuminating	$7,487,844	7,673,001	85,619,353	82,525,204
Gas and fuel, gallons	107,913,771	141,401,543	1,440,281,923	1,368,003,714
Gas and fuel	$3,810,518	4,238,069	49,352,598	49,044,756
Lubricating, gallons	28,764,164	39,591,064	379,399,643	403,045,633
Lubricating	$6,655,815	8,850,637	86,668,846	91,059,729
Paraffin wax, pounds	$1,603,369	$1,785,948	$32,830,015	$33,609,614
Paraffin wax	$1,734,989	1,734,264	18,536,140	18,596,749

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Foreign Oil at Seaboard Refineries

Inland Refineries Took Care of Bulk of Increased Runs to Stills Throughout Country During 1925

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

The relations between the 10 distinct refining areas, in the matter of the relative amounts of crude run to stills by the different areas, has shifted around so radically in the last 3 years that the industry today hardly realizes the significance of what has taken place.

In 1924, we run to stills 60,000,000 bbls. more domestic crude than in 1923. Of this increase, 31,000,000 bbls. was run by what we will call "Seaboard" refineries—that is, East Coast, Texas Gulf Coast and Louisiana Gulf Coast, but not California as it runs no foreign crude. The other seven refining areas in the United States run the remaining 29,000,000 bbls. of the 60,000,000-bbl. increase in domestic crude.

In 1925, about 97,000,000 bbls. more domestic crude was run to stills in the United States than in 1924. And of this increase the Seaboard refineries contributed 27,000,000 bbls. and all of the other refining areas contributed 70,000,000 bbls.

Significance of Shift

The significance of this shift goes a great deal farther than simply 31,000,000 and 29,000,000 increase in 1924 and 27,000,000 and 70,000,000 increase in 1925.

Probably most of the industry felt that tankers were shifting the oil around and that the East Coast and Gulf Coast refineries would account for practically all of the increase in refinery runs in 1925.

The fact, however, is that in 1925 the East Coast refinery runs of domestic crude were about 4,000,000 bbls. less than in 1924—the Texas Gulf Coast runs were about 17,000,000 bbls. more—and the Louisiana Gulf Coast about 14,000,000 bbls. more. This makes a net increase in refining runs for these three areas of 27,000,000 bbls. in 1925.

These are the only areas that ever run any foreign crude—and, in 1925, they run a little less foreign crude than in 1924, and practically the same amount as in 1923.

The outstanding and significant fact is that these Seaboard refineries increased their runs of domestic crude 31,000,000 bbls. in 1924, and 27,000,000 bbls. in 1925, whereas the other refining areas increased their runs 27,000,000 bbls. in 1924, and 70,000,000 bbls. in 1925.

In the first 11 months of 1925 approximately 5.6 per cent of the total crude oil run to stills at the refineries in the United States was "foreign" crude—and 94.4 per cent was "domestic" crude.

In the year 1924, approximately 7.1 per cent of all the crude run to stills was foreign—and in 1923 the total crude throughput was 7.4 per cent foreign crude.

This decrease in the percentage of foreign crude is due to the increased runs of domestic crude, rather than to changes in the amount of foreign crude run to stills.

In 1923, we ran 538,000,000 bbls. of domestic crude to stills—in 1924, the domestic crude run totaled 598,000,000 bbls.—and in the first 11 months of 1925 it totaled 639,000,000 bbls.

This means that in 1924 there was an increase of 60,000,000 bbls. in the domestic crude run to stills—and, based on the first 11 months' operations, it means an increase in 1925 of about 97,000,000 bbls. over 1924.

Foreign Crude Level

On the other hand, in 1923, we ran 43,000,000 bbls. of foreign crude oil to stills—in 1924, we ran a little less than 46,000,000 bbls.—and, based on the first 11 months, in 1925, we ran about 42,000,000 bbls.

This means that in the last three years we have run about the same amount of foreign crude to stills, an average of about 43,000,000 bbls. a year.

If, in 1926, we ran about the same amount of foreign crude oil that we have been running for the last three years (say only 40,000,000 bbls.)—and if the increase in the runs of domestic crude is 85,000,000 bbls. (the increase in 1925 was 97,000,000 bbls.), this will mean that, in 1926, we will run 780,000,000 bbls. of domestic crude to stills and about 40,000,000 bbls. of foreign crude, or a total of about 820,000,000 bbls.

In as much as practically all of the "foreign" crude oil that entered the United States up to the close of 1924 was Mexican crude, and as almost all of the foreign crude oil run to stills in 1925 was Mexican crude, the word "foreign" can, for all practical purposes, be construed as meaning Mexican.

What Graphs Show

Referring to Graph 1 we find, by comparing line 1 with line 2, that, during the seven-year period, the United States took the great bulk of Mexican crude oil and its products. The space between lines 1 and 2 represents that part of the Mexican output of crude and refined that did not find a market in the United States.

Beginning with the latter part of 1921 the dotted line (3) shows the Mexican crude oil imported into the United States while the space between lines 3 and 2 represents the refined products imported into the United States. This space widened in the closing months of 1922, but in the last three years there has been little change in the ratio between the crude oil and the refined products entering the United States.

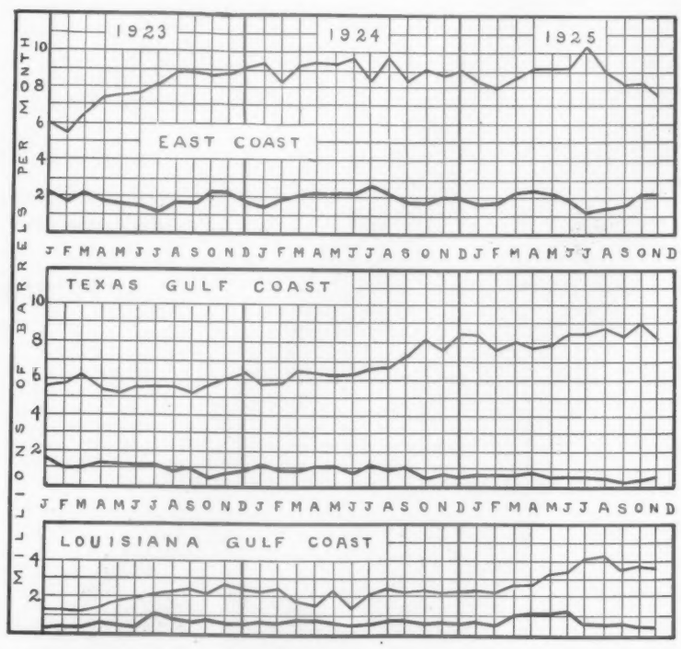
The net result of the operation, in 1921, of vital factors, local, national and international, is vividly shown by the "sag" in line 1, and a corresponding sag in line 2. From the peak of line 1, in December, 1921, there was a rapid decline in 1922—a rather "even" production in 1923, but very substantially less than in 1922—another decline in 1924—and another decline in 1925.

Followed Production

In this seven-year period, with but few exceptions, the curve of total imports into the United States traveled up and traveled down with production. And, obviously, the curve showing our imports of Mexican crude oil followed very closely the swings of the lines showing total imports and total production.

All of the Mexican crude oil that is refined in the United States is refined

(Continued on Page 250)


1923
1924
1925
EAST COAST
TEXAS GULF COAST
LOUISIANA GULF COAST
MILLIONS OF BARRELS PER MONTH
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

Graph 2—Runs to stills of domestic and foreign crude oil at refineries on the East Coast, Texas Gulf Coast and Louisiana Gulf Coast. Areas shown separately. Foreign crude shown by heavy line.

Graph 1—Line 1, total monthly production of crude oil in Mexico. Line 2, total monthly imports into the United States of crude and refined oils. Line 3, total monthly imports of crude oil. Line 4, total monthly runs to stills of domestic oil at refineries on the East Coast, Texas Gulf Coast and Louisiana Gulf Coast. Line 5, total monthly runs to stills of foreign oil.

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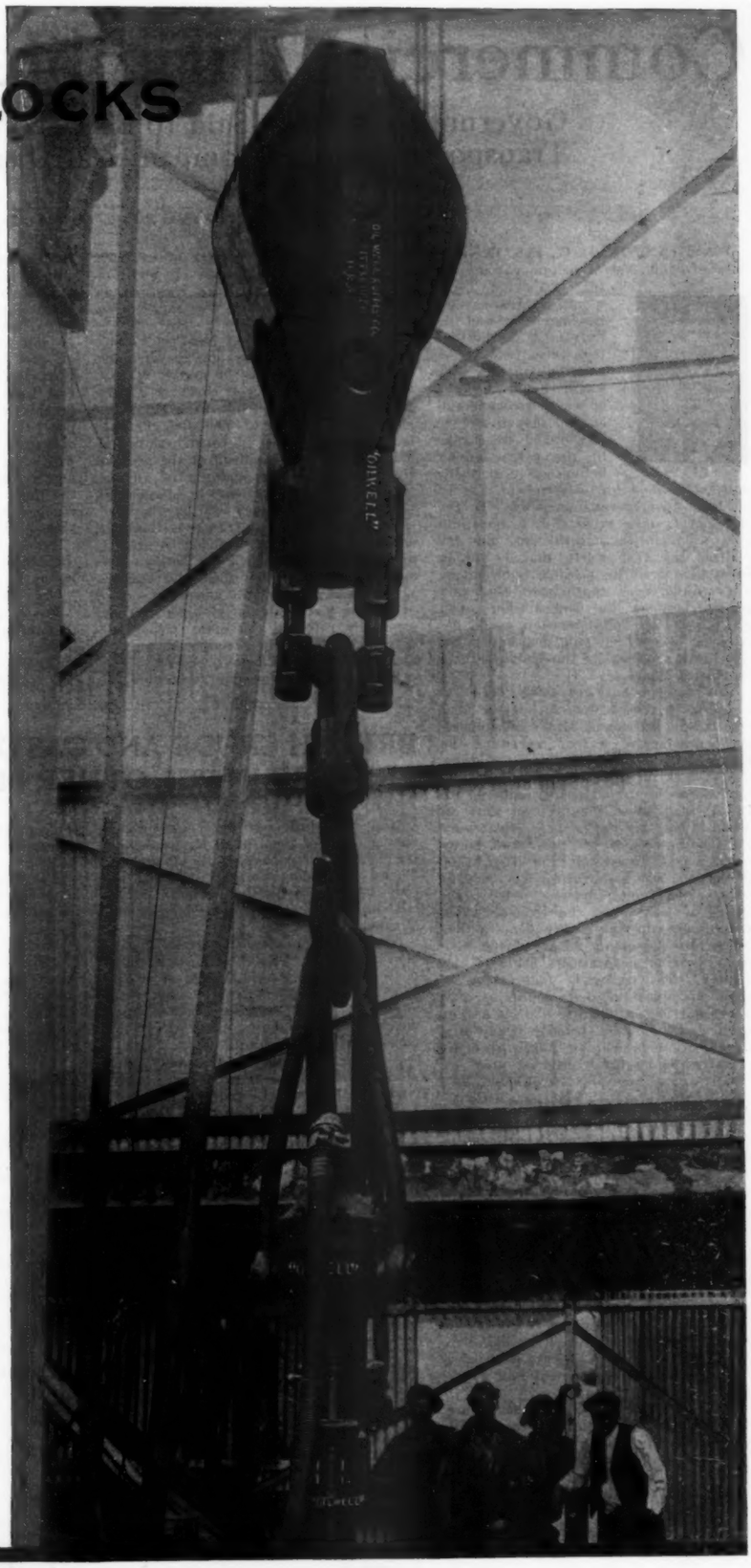

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Commercial Dirigibles Await Helium

Government Secrecy Said to Be Delaying the Development of Air Transportation. Gas Companies at Disadvantage Wasting Product

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 15.—Millions of cubic feet of helium gas are being wasted every month in the natural gas industry and influential authorities here are today considering whether this waste should continue or whether commercial enterprises should be encouraged to engage in the extraction of helium gas to be made available either for Government use or for purely commercial purposes. In the opinion of some experts it is questionable whether the natural gas industry realizes the vast waste that is taking place in one of its possible by-products. They cannot even approximate the exact figures because the information upon which such an approximation would depend has never been published and today is held as a secret by the United States Bureau of Mines.

This subject has previously been referred to in these columns, but the attitude of the Bureau of Mines in supporting the policy of secrecy respecting the helium content of the hundreds of samples of natural gas that have been examined has been consistently adhered to. The Bureau takes the position that its action is only for the purpose of carrying out the policies of the War and Navy Departments based on the idea that helium is a war material for the national defense and should continue to be so regarded at least until the United States Government, through congressional action comes into possession of all of the best helium-bearing natural gas fields of the country. The writer is undertaking to carry this objection to its source so that there may be a definite determination whether, in view of present conditions, the objection to making public this information is as firmly decided upon as it appears to some Bureau officials.

To Encourage Dirigibles

The intensive development of airplane service by the Post Office Department is bringing to the front suggestions for a further advance in the navigation of the air by encouraging the construction of dirigible balloons as a commercial enterprise. Just as the first use of the airplane was by the Government for experimental purposes and was then followed by commercial activity which is now being depended upon to furnish such service, so the dirigible balloon has been proved practicable by Government experiments and it is believed in turn it is bound to drift into the hands of private enterprise for its continued development and application to commercial uses.

The Post Office Department has either made, or has in immediate contemplation by advertisements, contracts to connect Florida, Louisiana, Oklahoma and Texas with the transcontinental air line established by the Government from New York to Los Angeles via San Francisco, for the carriage of the mails. These contract lines of airplanes will act as feeders of the transcontinental route. It is now well understood that these contract lines are being operated by private companies that expect to maintain themselves largely by the private carriage of valuable and quick-moving freight and by passenger service without which they believe they could not expect to become commercially profitable. That condition being acknowledged, it is now pointed out that the dirigible balloon is infinitely more comfortable and safer than the airplane for passenger service beside being vastly more commodious for the carriage of valuable freight than is the airplane. In addition to these qualities they are regarded as just as serviceable for the carriage of the mails.

Helium Chief Need

It is true the airplane has the dirigible balloon outstripped in the matter of cost for the limited service of carrying a comparatively small amount of mail, especially on short runs. The dirigible balloon is more costly in construction and has a prohibitive handicap at the present time because of the inability of anyone to obtain helium gas for a commercial purpose. However, men who have studied these two methods of transportation are convinced that the tremendously greater advantages of the dirigible balloon are sufficient to make that form of transportation practicable if an adequate source of helium gas could be obtained. They especially refer to the many trips that may be made by the dirigible as an element of earning efficiency.

The methods followed at this time for the extraction of helium gas are the result of only a few years of research and experience in the operation of a large extraction plant. From the laboratory extraction of helium gas costing thousands of dollars to obtain a single cubic foot of such gas, the Government plant at Fort Worth, Tex., long ago reduced the cost to 6 cents per cubic foot with the prospect of a further reduction to 3 cents per cubic foot in the larger plants now operating. What the cost can be made with further improvement no one can now predict but experience indicates that the limit of reduction cost has not been reached by any means. These results have been obtained by the treatment of natural gas that is quite rich in helium content obtained from fields in the vicinity of Fort Worth.

Developed by Government

It was quite natural and necessary that this initial development of a helium gas industry should have been undertaken by a Government agency and it was justified not only on account of the tremendous value attached to helium for the national defense but for the commercial uses that would follow the development of practical and cheap methods for the extraction of this noninflammable gas. To the United States Bureau of Mines, in conjunction with the Linde Co., is due this wonderfully successful effort which should bring commendation to that Bureau for its great achievement.

Up to the present time the Government has reserved for the use of the Army and Navy on a 50-50 basis all of the product of its helium plant at Fort Worth, with the single exception that for experimental purposes a limited amount of this helium gas has been delivered to universities or other institutions and to scientists who have desired to avail themselves of it. Conditions, however, are now outstripping those limitations, if a commercial use is ever to be made of helium gas. The time has arrived when this gas can actually be made practical use of in certain radio and electric light tubes, in diving apparatus, in certain underground conditions and for various other purposes that are being worked out by scientific research. Many of these purposes are merely dormant because there is no inducement offered for their development by any source of supply of helium gas for commercial use.

The Fort Worth plant, the only great helium-extraction plant in the country, has provided helium for experimental purposes but under present restrictions cannot supply it to place those experiments on a commercial basis. Every day there is a continuation of various experiments looking toward new uses that can have no realization until there is an adequate supply of this gas. The very restrictions placed upon the use of helium gas from the Fort Worth plant might tend to deter some experimenters from obtaining a supply there, even for use in the laboratory. This restriction is a requirement that the nature and result of the experiment shall be reported to the Bureau. The suspicion and timidity of inventors are both proverbial. They like to work quietly through the long hours of the day and night and keep everything they are doing a secret within their own breasts until some great day when they hope to astonish the world by their discoveries.

Commercial Production

Private companies that may be in contemplation for the purpose of erecting commercial helium-extracting plants are met with a discouraging obstruction because of the difficulty of ascertaining the location of the best helium-bearing natural gas fields. Hundreds of wells have had their natural gas analyzed by the Bureau of Mines and these analyses are sacredly preserved in the archives of that important branch of the Government here in Washington. These records are kept in the utmost secrecy. Not even the owners of the wells from which these samples have been taken are permitted to know what the Government analyses show. It is true that the natural gas companies can themselves have the product of their wells analyzed and in that way can gain this information. It is also true that they can contract with private companies for the extraction of the helium content but many of the smaller companies are not prepared to take on an extra expense of that kind.

Private companies, in order to act intelligently in any helium gas enterprise, must be able to consider the United States as a whole in their efforts to lay out a campaign for a large helium-extraction plant or plants. This is not

(Continued on Page 248)

BRITISH CRUDE AND GAS OIL IMPORTS RECORD IN 1925; OTHER PRODUCTS DROP

The official details of the petroleum import trade of the United Kingdom during 1925, as reported in the Petroleum Times of London, show that during the past 12 months British receipts of petroleum products from abroad have constituted a record.

The total for the 12 months' period has been 1,606,874,528 gallons, as compared with the revised figures of 1,570,910,891 gallons imported during 1924, and 1,325,108,721 gallons in 1923. Last year's total constitutes a record of imports into Great Britain.

A remarkable expansion has taken place in the British petroleum import trade for the past 12 years.

The imports of the various products in 1925, compared with those of the preceding year, were:

	1925 Gallons	1924 Gallons
Illuminating oil	141,649,425	124,678,042
Motor spirit	404,874,801	422,310,941
Lubricating oil	85,473,333	101,746,517
Gas oil	72,635,202	67,905,598
Fuel oil	334,401,599	385,581,996
Crude oil	561,621,482	464,363,270
Other products	6,218,687	4,324,527
Totals	1,606,874,528	1,570,910,891

With the exception of crude oil receipts and gas oil consignments, there was an all-around decrease in the imports last year. Excluding crude oil, the figures are 1,045,253,046 gallons, as compared with 1,106,547,621 gallons in 1924.

The explanation is the growth of the home refining industry centered at Swansea, at Shell Haven, and at Grangemouth. The total quantities of crude oil received for treatment in these refineries last year established a record, and was about 100,000,000 gallons more than the quantities imported in 1924.

The values of the imported oils this year are given in the following table, together with those for 1924:

	1925	1924
Illuminating oil	£ 2,927,588	£ 2,958,113
Motor spirit	16,827,763	17,846,469
Lubricating oil	4,739,529	5,869,466
Gas oil	1,275,603	1,209,746
Fuel oil	4,653,740	5,603,583
Crude oil	8,842,913	7,740,012
Other sorts	245,424	197,028
Totals	£39,512,560	£41,424,417

While the total values of British petroleum imports in 1925 were nearly £2,000,000 less than those of the preceding year, this decrease is shared by all products with the exception of crude oil and gas oil. The value of the imported crude oil is taken at slightly under 8 cents per gallon for the previous 12 months.

During the past 12 months the total values of imported crude oils exceeded

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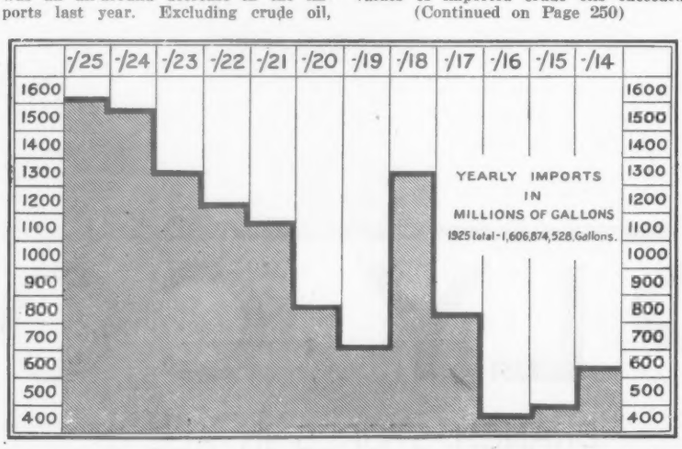

—Petroleum Times, London.

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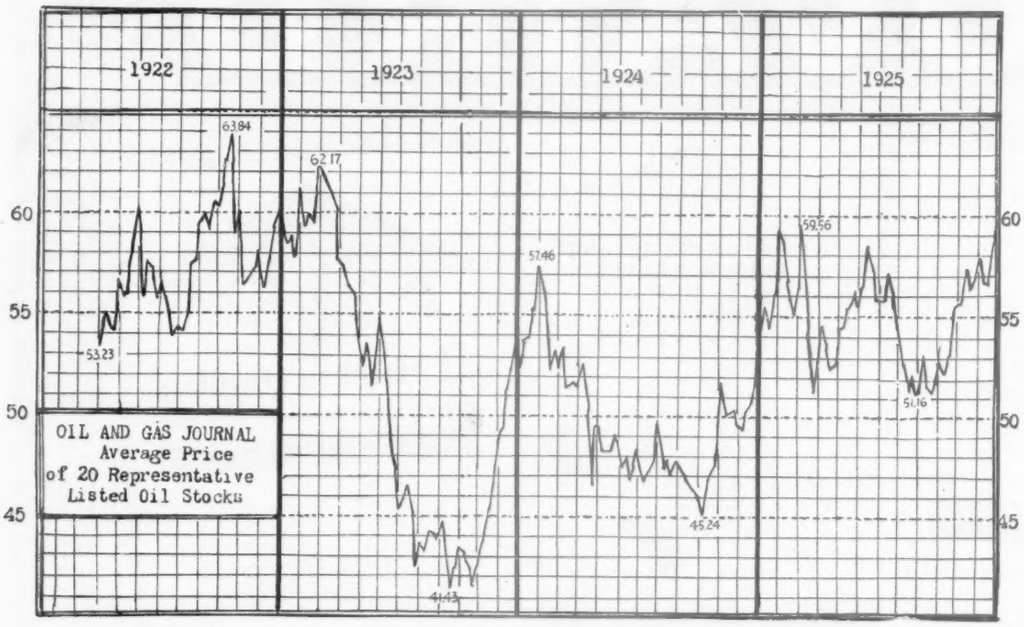
Interest in Oil and Gas Securities Expanded



By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Feb. 15.—Looking back on 1925, a considerable degree of expansion in financial interest in oil and oil securities can be noted, compared with the preceding year. This expansion, however, was gradual and did not have any of the earmarks of a "boom."

The record of transactions on the New York Stock Exchange in oil securities indicated a growing interest in that group. Total transactions for the year aggregated 56,969,259 shares of stock, compared with 42,778,381 shares traded in during 1924, an increase of 14,190,878 shares, or approximately 33 per cent.

Oil stocks closed 1925 at prices higher than those of December 31 of the preceding year, gains of 10 to 25 points in individual issues being quite common. These gains are revealed by The Oil and Gas Journal's average price of 20 representative oil stocks listed on the New York Stock Exchange, which closed the year at 59.40, compared with 51.73 at the end of 1924, an increase of 7.67 points, or approximately 14.8 per cent.

The number of oil companies whose stocks are listed on the New York Stock Exchange is 45, compared with 44 a year ago. Newcomers on the list are Oil Well Supply, Sun Oil and Pan American Western. During the year Oklahoma Producing & Refining, and Indiahoma Refining stocks were eliminated.

The accompanying table shows transactions (shares) in oil securities on the New York Stock Exchange during 1925, with closing prices and change compared with close of 1924.

Total transactions in oil bonds listed on the New York Stock Exchange, as shown, aggregated $96,698,000 in par value. Oil bond prices made substantial gains in 1925, especially convertible issues, notably Skelly Oil convertible 6½ per cent bonds, which advanced 22⅛ points to 128⅛, with transactions totaling $15,177,000 par value.

Most Active Issues

The most active dealing in stocks on the exchange was in Pan American Petroleum & Transport "B," which stocks was turned over to the extent of 7,101,760 shares. Marland Oil stock transactions for the year aggregated 5,980,300 shares, the second largest, while Pacific Oil was third with 3,871,660 shares.

Name of Company	Sales	Close	Change
American Republics	17,500	72	Plus 25
Associated Oil	870,600	46¼	Plus 12⅞
Atlantic Refining, common	330,400	108¾	Plus 13¼
Atlantic Refining, preferred	9,700	116	Plus 2
Barnsdall Corp. "A"	108,700	33¼	Plus 9⅜
Barnsdall Corp. "B"	120,400	29⅝	Plus 11⅞
Caddo Central Oil & Refining	101,600	¼	Minus ⅛
California Petroleum	2,318,500	34	Plus 10½
General Petroleum	2,910,700	58⅝	Plus 16⅝
Houston Oil	793,600	72½	Minus 7½
Independent Oil & Gas	384,400	32⅝	Plus 16⅞
Indian Refining, common	340,800	12⅝	Plus 7⅝
Indian Refining, preferred	6,900	105	Plus 30
Kansas & Gulf Co.	46,300	⅛	Minus ⅛
Maracaibo Oil Exploration	429,800	26⅝	Minus 2⅛
Marland Oil	5,980,300	59¼	Plus 20⅝
Mexican Seaboard Oil	662,300	11⅝	Minus 9⅝
Mexican Petroleum	130	250	Plus 60
Middle States Oil	536,300	1¼	Plus ⅛
National Supply, common	128,400	56½	Minus 5¼
National Supply, preferred	2,200	106⅝	Plus ½
Oil Well Supply, common	24,100	33⅝	*.....
Oil Well Supply, preferred	2,500	105	*.....
Pacific Oil	3,871,660	75⅝	Plus 21¼
Pan American Petroleum	1,116,300	76	Plus 12
Pan American Petroleum "B"	7,101,760	77⅝	Plus 13⅝
Pan American Western "B"	249,100	46	*.....
Panhandle Producing, common	75,600	5⅝	Plus 2⅞
Panhandle Producing, preferred	6,500	52	Plus 12
Phillips Petroleum	3,548,200	46½	Plus 9½
Pierce Oil, common	339,000	1⅝	Minus ⅛
Pierce Oil, preferred	54,100	25½	Plus ½
Pierce Petroleum	1,361,990	5	Minus ⅝
Producers & Refiners, common	296,800	17⅝	Minus 11½
Producers & Refiners, preferred	2,100	33¼	Minus 10
Pure Oil, common	1,331,200	30½	Plus ⅝
Pure Oil, preferred	11,900	106⅝	Plus 2⅜
Royal Dutch	734,800	56	Plus 2⅜
Shell Transport & Trading	47,000	48⅜	Plus 6⅜
Shell Union Oil, common	2,797,980	28½	Plus 5⅝
Shell Union Oil, preferred	29,790	104	Plus 4½
Simms Petroleum	1,331,300	28	Plus 5
Sinclair Consolidated, common	1,996,470	23⅞	Plus 6⅜
Sinclair Consolidated, preferred	36,850	92	Plus 13
Skelly Oil	1,798,900	32½	Plus 8
Standard Oil of California	1,134,100	61⅞	Minus ⅝
Standard Oil of New Jersey, common	3,045,290	46	Plus 5½
Standard Oil of New Jersey, preferred	125,710	117	Minus ⅛
Sun Oil	50,100	40⅞	*.....
Superior Oil	313,420	3	Minus 1⅛
The Texas Co.	3,104,167	54⅝	Plus 11¼
Texas Pacific Coal & Oil	1,732,510	17⅜	Plus 5⅝
Tide Water Oil, common	208,300	35⅞	.....
Tide Water Oil, preferred	21,600	99½	*.....
Transcontinental Oil	964,900	4¼	Plus ¼
Union Oil of California	1,050,700	41⅝	Plus 4
Union Tank Car, common	65,632	94	.....
Union Tank Car, preferred	8,200	115	Plus 1
White Eagle Oil & Refining	306,200	28⅝	Plus ½
Bonds			
American Republics, 6 per cent debentures	$1,059,000	98	Plus 6½
Associated Oil, 6 per cent	1,086,000	102⅝	Plus ⅝
Atlantic Refining, 5 per cent deb.	1,578,000	99⅞	Plus 2⅛
Barnsdall Corp., 8 per cent	2,882,000	105⅛	Plus 2⅛
California Petroleum, 6½ per cent s. f.	4,906,000	104	Plus 3¼
Empire Gas & Fuel, 7½ per cent	12,077,000	102½	Plus 4⅝
Humble Oil & Refining 5½ per cent	3,048,000	101¼	Plus 1⅜
Mid-Continent Petroleum, 6½ per cent	4,645,000	101½	.....
Pan American Petroleum & Transport, 7 per cent	996,000	105½	Plus 1
Pan American Petroleum & Transport, 6 per cent	11,794,000	111⅝	Plus 9
Pierce Oil, 8 per cent deb.	215,000	104¼	Plus 1¼
Producers & Refiners, 8 per cent	276,000	110½	Plus ½
Sinclair Consolidated Oil, 7 per cent col.	4,632,000	93½	Plus 6
Sinclair Consolidated Oil Co., 6½ per cent	3,637,000	87¼	Plus 3⅜
Sinclair Consolidated Oil, 6 per cent	16,672,000	111½	.....
Sinclair Crude Purchasing, 6 per cent	8,168,000	100⅛	Plus ⅝
Sinclair Pipe Line, 5 per cent s. f.	2,981,000	87	Plus 5
Skelly Oil 6½ per cent	15,177,000	128⅛	Plus 22⅛
Superior Oil, 7 per cent s. f.	145,000	93	Minus 5
Union Oil of California, 6 per cent-A	415,000	104	Plus 1
Union Oil of California, 5 per cent-B	212,000	100⅝	Plus ⅛
Union Oil of California, 5 per cent-C	97,000	95⅝	Plus ⅝

Sinclair Consolidated Oil Corp. 6 per cent bonds were the most active in the bond group, transactions in them for 1925 aggregating $16,672,000 par value. Skelly Oil 6½s came next with $15,177,000. Transactions in Empire Gas & Fuel 7½s were heavy, aggregating $12,077,000, while Pan American Petroleum 6s were traded in to the extent of $11,794,000 par value.

Trend of Oil Securities

Oil securities sold during 1925 at consistently higher levels than in 1923 or 1924. The accompanying chart shows the trend clearly. In fact, the chart would indicate that stocks have been moving higher steadily since the fall of 1923, with intermittent recessions.

Oil stocks at the close of 1925 were still below the high levels established in 1922, however. In October of that year the average rose to 63.84, while the peak for 1925 was 59.56 on March 2, and the average closed 1925 at 59.40, or very close to the top.

The low point of the average in 1925 was 51.16 on August 31. This is approximately 5 points above the low for 1924 and 10 points higher than the low for 1923.

Outlook For 1926

Indications are that new listings of oil stocks during 1926 will be larger than in 1925, and that oil securities will be more active. Some changes in corporate names will take place, due to consolidations and acquisitions.

LECTURE ON URANIA BY PROFESSOR HOWE

SHREVEPORT, La., Feb. 13.—From microscopic study of cores taken from the Louisiana Oil Refining Corp.'s Tremont Lumber Co. wells in the Urania Field of LaSalle Parish, it is found that the subsurface formations may be correlated with the type fossil localities already known on the surface, Prof. L. V. Howe, head of the department of geology of Louisiana State University, said in the second of his series of lectures before the extension class in graduate geology preceding the regular business session of the Shreveport Geological Society. The lecture was the second of the series under the general subject of "Paleontological Correlation of the Claiborne Formation." Further study, it is hoped, will lead to a more exact determination of the producing sand in the new field, which is holding the attention of Louisiana operators.

Previous to the lecture the geologists held a business session, during which John Ivy, president, called for reports from standing committees.

George Belchic, chairman of the committee designed to lead to the creation of a Louisiana State geological survey, reported that the preliminary draft of a bill to be submitted to the next legislature has been prepared, but the committee is not quite ready to launch its campaign.

NEW YORK OPERATIONS

BOLIVAR, N. Y., Feb. 13.—Neil Crandall is drilling a well for the Witherspoon Oil Co. on the Loop farm, Genesee road. P. J. Sackinger has recovered the tools lost in the Turner Oil Corp.'s well on the E. F. Root farm, town of Bolivar, last spring. Drilling has been resumed. The Piper Farm Oil Co. is drilling two wells on the Piper farm. The company will drill several natural and flood wells on this farm, installing a pressure pump in the spring. Leon Jordan has completed a well for the Producers O.l Co. on the Keller farm at Richburg; it did a head of 26 bbls. Mr. Jordan has moved his drilling tools to the Hamsher farm in Bolivar, where he will drill a well for Henline & Bonner.

J. H. MERRILL DEAD

J. H. Merrill, general manager of the Duthie Oil Co., died recently at Chadron, Neb., at the age of 45 years. Mr. Merrill was formerly connected with the Wyoming-Pacific Oil Co. and went to the Rocky Mountain region in 1917. He was field manager for the Duthie Oil Co. in the Salt Creek Field and drilled several wells there for that firm. Recently the Duthie Oil Co. became interested in a structure in Nebraska near Chadron and Mr. Merrill was superintending the putting down of a well near there at the time of his death.

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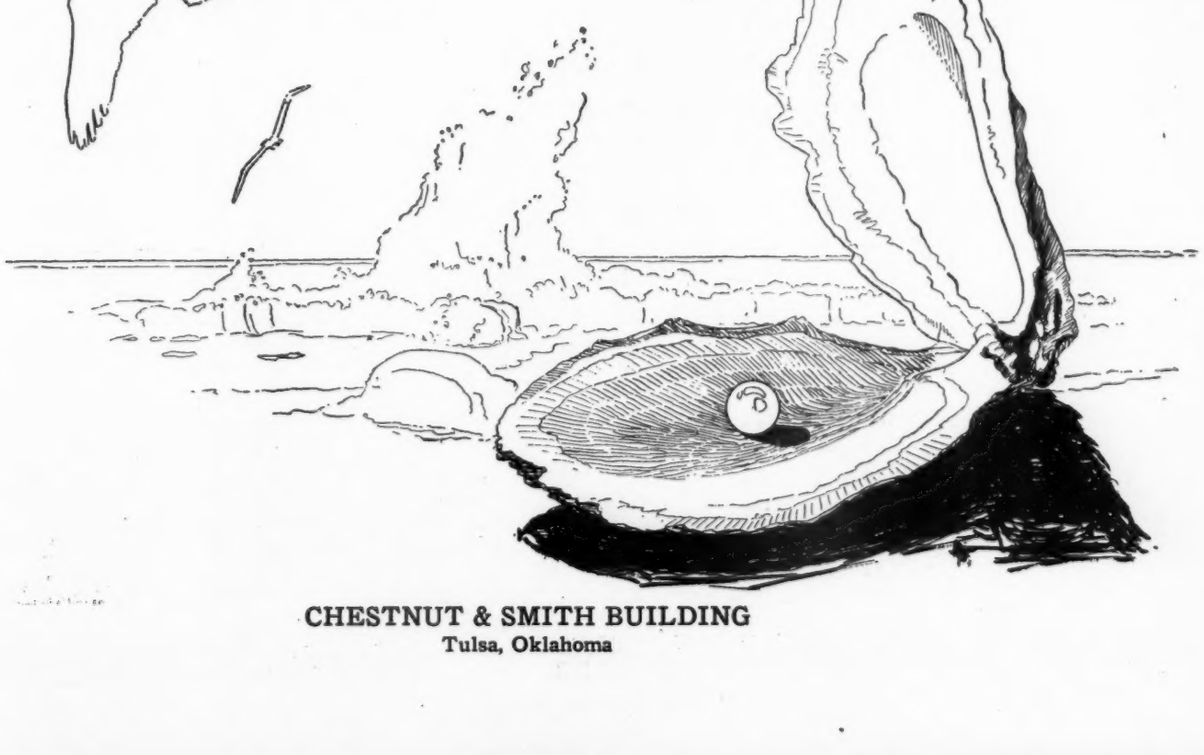


CHESTNUT & SMITH BUILDING
Tulsa, Oklahoma

Tank Wagon Prices Higher During 1925

Upward Tendency Developed, Reaching Peak August 1, and Giving a Better Average Than During 1924

By Neil Williams

After showing a decline since 1920, average tank wagon prices throughout the United States during 1925 again turned upward. As a result, the average price in The Oil and Gas Journal's 50 representative cities on January 1, 1926, was 2.255 cents greater than on the same day of the previous year.

As shown in the accompanying table, the average price the first day of this year was 16.173 cents while that of a year ago was 13.918 cents. However, the price the first day of this year lacked 1.058 cent of equalling that of January 1, 1923, which also was considered unusually low.

The comparison of prices on the first day of each year also was in line with the yearly averages based on the average prices on the first day of each month. The average price in the 50 cities for the entire year of 1925 was 17.372 cents as compared with 16.555 cents in 1924. In 1923 the average price was 18.430 cents. These figures are obtained by dividing the sum of the average prices the first day of each month by 12.

The tank wagon prices increased during 1925 in face of the fact that the year was marked with bitter price wars during which prices were slashed in some cities close to or below tank car or refinery prices. This was particularly true of Wichita, Kan., where the tank wagon price hovered at 8.8 cents the greater part of the summer and autumn.

However, the higher tank wagon prices were the reflection of generally higher refinery prices throughout the year. The average refinery price for U. S. Motor gasoline for 1925 was 10.55 cents while that of 1924 was only 8.96 cents. The average for 1923 was 9.78 cents. These averages are based on the low market prices quoted in The Oil and Gas Journal each week.

Increased Fluctuation

Noticeable during the year was the increased tendency toward fluctuation, particularly during spring and summer. In previous years, tank wagon prices

TABLE SHOWING GASOLINE TANK WAGON PRICES IN EFFECT JANUARY 1, 1926, EXCLUSIVE OF TAXES, IN 50 REPRESENTATIVE CITIES, WITH AMOUNT PAID AND DATE OF ALL CHANGES IN 1925, WITH GASOLINE TAXES IN EFFECT JANUARY 1, 1924 AND 1925 AND 1926

	First Six Months												Year 1925	Second Six Months									
	1/1	1/19	1/28	2/6	2/24	4/20	6/1							8/21	8/27	9/9							
Birmingham, Ala.	13.0	15.0	17.0	19.0	20.0	19.0	20.0							19.0	18.0	17.0							
		2//																					
Phoenix, Ariz.	18.0	20.0																					
		1/15	1/23	1/27	2/5	3/19	3/31	4/9	5/27					8/8	8/14	8/19	8/27	9/3	9/22	10/3	10/26	11/20	12/4
Little Rock, Ark.	13.0	14.5	16.0	17.0	19.0	18.0	17.0	18.0	19.0					18.0	16.5	14.0	13.5	13.5	13.0	12.0	12.5	13.5	14.5
		2/4												9/10									
San Francisco, Cal.	13.0	15.0												14.0									
		1/26	1/28	2/6	2/16									7/20	8/26	9/2	10/19						
Denver, Colo.	12.0	14.0	15.0	17.0	19.0									20.0	18.0	17.0	16.0						
		1/15	1/24	1/31	2/4	3/20	5/27							8/10	8/27	12/1							
Hartford, Conn.	15.0	17.0	18.5	19.5	21.0	20.0	21.0							20.0	16.0	17.0							
		1/23	1/28	2/3	5/27	6/4								8/10	8/17	8/27	9/7						
Dover, Del.	15.0	16.0	17.0	19.0	20.0	21.0								20.0	19.0	18.0	17.0						
		1/19	1/28	2/6	2/24.	4/20	6/1							8/21	8/27	9/9							
Jacksonville, Fla.	12.0	14.0	16.0	18.0	19.0	18.0	19.0							18.0	17.0	16.0							
		1/19	1/28	2/6	2/24	4/20	6/1							8/11	8/26	12/10							
Atlanta, Ga.	14.0	16.0	18.0	20.0	21.0	20.0	21.0							18.0	17.5	18.0							
		2/5	2/6											9/3	10/9								
Boise, Idaho	19.5	20.5	21.5											21.0	20.0								
		1/23	1/26	1/31	2/13									7/14	7/26	8/25	9/8	9/29					
Peoria, Ill.	13.0	14.0	15.0	16.0	18.2									19.2	14.0	13.0	11.0	10.5					
		1/23	1/26	1/31	2/13	4/18								7/14	8/25	9/1							
†Chicago, Ill.	13.0	14.0	15.0	16.0	18.0	17.0								18.0	16.0	15.0							
		1/23	1/26	1/31	2/13									7/14	8/25	9/1							
Indianapolis, Ind.	13.2	14.2	15.2	16.2	18.2									19.2	17.2	16.2							
		1/23	1/26	1/31	2/13									7/14	7/26	9/21	9/22	12/19					
Des Moines, Ia.	13.5	14.5	15.5	16.5	18.5									19.5	17.5	18.5	13.5	16.5					
		1/23	1/26	1/31	2/13									7/14	8/25	9/11	12/16						
Wichita, Kans.	12.8	13.8	14.8	16.8	17.8									18.8	16.8	8.8	15.8						
		1/19	1/28	2/2	2/9	2/24	4/20	6/16						8/21	8/27								
Louisville, Ky.	12.0	14.0	16.0	16.0	18.0	19.0	18.0	10.0						18.0	17.0								
		1/16	1/23	1/27	2/4	2/10	3/31	5/13	5/26	6/16				8/8	8/14	8/27	9/3	9/21	10/3	10/17	10/26	11/20	12/4
New Orleans, La.	11.5	14.0	15.5	16.5	18.5	17.5	16.5	17.5	18.5	16.5				14.5	13.5	13.0	12.5	13.0	12.5	12.0	12.5	13.5	14.0
		1/15	1/24	1/31	2/4	3/19	5/14	5/27						8/10	8/17	11/5	11/30						
Augusta, Maine	15.0	17.0	18.5	19.5	21.0	20.0	21.0	22.0						20.0	18.0	16.0	17.0						
		1/15	1/23	1/27	2/3	2/19	4/7	5/13	5/26					8/8	8/14	8/20	8/25	9/3	9/26				
Baltimore, Md.	13.0	14.0	16.0	17.0	19.0	18.0	17.0	18.0	19.0					18.0	17.0	16.5	16.0	16.5	15.0				
		1/15	1/24	1/31	2/4	3/20	6/27							8/10	8/27		12/1						
Springfield, Mass.	15.0	17.0	18.5	19.5	21.0	20.0	21.0							20.0	16.0		17.0						
		1/23	1/26	1/31	2/13									7/14	8/26	9/1							
Detroit, Mich.	13.8	14.8	16.8	16.8	18.8									19.8	17.8	16.8							
		1/22	1/26	1/31	2/13									7/14	8/25	9/1	10/3	12/15					
Duluth, Minn.	14.5	15.5	16.5	17.5	19.5									20.5	18.5	17.5	13.5	15.5					
		1/19	1/28	2/6	2/24	4/20	6/1							8/21	8/27	9/9							
Natchez, Miss.	11.5	13.5	15.5	17.5	18.5	17.5	18.5							17.5	16.5	15.5							
		1/23	1/26	1/31	2/13									7/14	7/26	9/1	9/7	11/10	12/26				
*Kansas City, Mo.	12.9	13.9	14.9	15.9	17.9									18.9	16.5	14.9	12.9	14.9	16.9				
		1/23	1/28	2/6	2/16	3/12								7/21	8/25	9/2							
Helena, Mont.	18.0	19.0	20.0	21.0	22.0	23.0								24.0	22.0	21.0							
		1/24	1/28	1/31	2/18	6/6								7/15	8/14	8/20	9/5	9/18	9/21	11/13	11/24	12/14	
Omaha, Neb.	11.0	12.0	13.0	14.0	16.0	18.25								19.25	17.5	17.25	15.5	11.0	10.0	12.25	14.25	16.25	
		2/4												9/10									
Reno, Nev.	16.5	18.5												17.5									
		1/15	1/23	1/31	2/3	3/19	4/7	5/13	5/26					8/8	8/14	8/20	8/25	9/3	9/26				
Newark, N. J.	13.5	14.5	16.0	17.0	19.0	18.0	17.0	18.0	19.0					18.0	17.0	16.5	16.0	15.5	15.0				
		1/28	2/6	2/18										8/20	8/27	9/3							
Albuquerque, N. M. ...	19.5	20.5	21.5	23.5										22.5	21.5	20.5							
		1/15	1/25	1/31	2/4	3/20	5/17	5/14	5/22	5/25	5/27	6/13		8/10	8/26								
New York, N. Y.	15.0	17.0	18.5	19.5	21.0	20.0	18.0	20.0	18.0	20.0	21.0	22.0		20.0	17.0								
		1/15	1/23	1/27	2/3	3/19	4/7	5/13	5/26					8/8	8/14	8/20	8/25	9/3	9/19	9/26			
Charlotte, N. C.	12.0	14.0	16.0	18.0	20.0	19.0	18.0	19.0	20.0					19.0	18.0	17.5	17.0	16.5	16.0	15.0			
		1/23	1/26	1/31	2/13									7/14	8/25	9/1							
Fargo, N. D.	14.9	15.9	16.9	17.0	19.0									20.9	19.9	18.9							
		1/28	2/4	2/19								8/24		9/29	11/2								
Cleveland, Ohio	15.0	16.0	17.0	18.0								17.0		18.0	16.0								
		1/19	1/26	1/27	2/2	2/4	2/13	2/19	3/20	4/8	5/29	6/3		8/4	10/13	11/24	11/27	12/1	12/12	12/30			
Tulsa, Okla.	9.5	10.5	11.5	12.5	14.5	15.5	16.5	17.5	16.5	15.5	16.5	18.0		16.0	14.0	15.0	17.0	15.0	16.0	14.0			
		2/4												9/10									
Portland, Ore.	13.0	15.0												14.0									
		1/23	1/28	2/3	5/27	6/4								8/10	8/17	8/27	9/5						
Philadelphia, Pa.	15.0	16.0	17.0	19.0	20.0	21.0								20.0	19.0	18.0	17.0						
		1/15	1/24	1/31	2/4	3/20	5/14	5/27						8/10	8/17	8/26	12/1						
Providence, R. I.	15.0	17.0	18.5	19.5	21.0	20.0	21.0	22.0						20.0	18.0	16.0	17.0						
		1/15	1/23	1/27	2/3	3/19	4/7	5/13	5/26					8/8	8/14	8/20	8/25	9/3	9/19	9/26			
Charleston, S. C.	12.5	14.0	16.0	18.0	20.0	19.0	18.5	19.5	20.5					19.5	18.5	17.5	17.0	16.5	16.0	15.0			
		1/23	2/13	4/11	5/30									7/14	8/5	8/8	9/1	10/29	12/17				
Huron, S. D.	15.0	16.0	19.0	15.0	17.0									20.0	18.5	17.0	14.0	13.0	14.0				
		1/15	1/23	1/27	2/4	3/19	3/31	5/13	5/26	6/16				8/8	8/14	8/19	9/3	10/5	11/20	1/5			
Memphis, Tenn.	12.6	13.5	15.0	16.0	18.0	17.0	16.0	17.0	18.0	16.0				15.0	16.5	15.0	13.5	10.5	12.0	13.5			
		1/19	1/26	2/2	2/4	2/18	5/23	6/3						8/27	12/7								
Dallas, Tex.	10.0	11.0	12.0	13.0	14.0	16.0	17.0	18.0						16.0	14.0								
		1/28	2/6											7/26	8/26	9/4	10/9						
Salt Lake City	17.5	18.5	20.5											21.5	20.5	19.0	18.5						
		1/15	1/24	1/31	2/4	3/20	5/13	5/27						8/10	8/17	12/1							
Burlington, Vt.	15.0	17.0	18.0	19.5	21.0	20.0	21.0	22.0						20.0	18.0	19.0							
		1/23	1/27	2/3	3/19	4/7	5/13	5/26						8/8	8/14	8/20	8/25	9/3	9/19	9/26			
Norfolk, Va.	14.5	16.5	18.0	20.0	19.0	18.0	19.0	20.0						19.0	18.0	17.5	17.0	16.5	16.0	15.0			
		1/23	1/27	2/3	3/19	4/7	5/13	5/26						8/8	8/14	8/20	8/25	9/3	9/26				
Washington, D. C.	14.0	16.0	17.0	19.0	15.0	17.0	18.0	19.0						18.0	17.0	16.5	16.0	15.5	15.0				
		1/23	1/27	2/3	3/19	5/13	5/26							8/8	8/14	8/25	9/3	9/19	9/26				
Charleston, W. Va.	14.0	16.0	17.0	18.0	17.0	18.0	19.0							18.0	17.5	16.5	16.0	15.5	15.0				
		1/23	1/26	1/31	2/13									7/14	8/26	9/1							
Milwaukee, Wis.	13.1	14.1	15.1	16.1	18.1									19.1	15.1	16.1							
		1/28	2/6	2/16										7/20	8/26	9/4							
Casper, Wyo.	14.0	15.0	17.0	19.0										20.0	18.0	17.0							
		2/4												9/10									
Seattle, Wash.	13.0	16.0												1.40									
		1/23	1/26	1/31	2/13									7/14	8/25	9/1	9/16	9/23	12/5				
Minneapolis, Minn.	14.2	16.2	16.2	17.2	19.2									20.2	18.2	17.2	15.2	13.2	15.2				
Average price	13.918																						

Note—Changes given in the above table were made by the several Standard companies in the sections in which they operate. In addition to the posted price in the territory of the Standard Oil Co. of Indiana a quantity purchase rebate schedule is in effect. The schedule is: On purchases over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1½ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases. The Magnolia Petroleum Co. also has a similar schedule as

*The tax in Missouri is 2 cents. The remainder of the tax at Kansas City is city tax.

maintained a fairly steady upward or downward trend but during 1925 from March to August prices were uncertain with rapid upward and downward fluctuations.

However, the difference between the highest price and the lowest price in 1925 was not as great as during 1923, although slightly more than in 1924. The spread in 1923 amounted to 7.87 cents; in 1925 it was 5.493 cents and in 1924 it was 5.12 cents.

As shown in the accompanying table, based on 50 cities, gasoline tank wagon prices were slightly higher in 1925 than in 1924 at most points. Taking the highest prices at each of the cities the average price during 1925 was 19.667 cents, which was 0.677 cent greater than that of 1924. The average of the low prices in 1925 was 13.638 cents in comparison with 13.27 cents of 1924. In other words, tank wagon prices during 1925 advanced to higher levels than during 1924 but did not slump to as low a mark.

The peak of prices in 1925 was reached on August 1 when the average in the 50 cities was 19.413 cents. Tank wagon advances during May, June and July, climaxed by the peak price of August 1, came at a time when crude and refinery gasoline markets were increasing rapidly in strength.

This peak price was 0.526 cent more than the highest price of 1924, which was 18.87 cents on March 1, and 2.117 cents less than the 21.53-cent peak of 1923. The lowest price of 1925 was 0.168 cent above that of 1924, and 0.258 cent above 1923.

Refinery markets broke August 1 with the result that tank wagon prices also declined until November, when refinery gasoline markets again developed strength. Since then tank wagon changes have been more or less steady with only scattered changes, principally caused by the elimination of price cutting wars in various parts of the country.

Unlike 1925, the peak prices of the two previous years were reached in March and from that time there was a steady decline until the last of November and December. The lowest price in 1925 was on January 1, while in 1924 it was on November 1, and in 1923 on December 1.

Taxes Higher

In addition to a slightly higher tank wagon price, consumers of gasoline also had to pay more in State and city taxes during 1925 than in the previous year. Eight additional States put gasoline tax laws into effect while 15 others increased their taxes. This resulted in an increase in the average in the average tax for the 50 cities from 1.76 cent on January 1, 1925, to 2.34 cents on the first of this year. This is an increase of a little over a cent in the average tax in the last two years.

The eight States which put gasoline taxes into effect during 1925 for the first time were: Missouri, 2 cents, January 1; Wisconsin, 2 cents, April 1; Nebraska, 2 cents, April 1; Iowa, 2 cents, April 16; Ohio, 2 cents, April 18; Kansas, 2 cents, May 1; Minnesota, 2 cents, May 1, and Rhode Island, 2 cents, June 1.

The States which increased taxes were: Tennessee, 2 to 3 cents, February 9; North Carolina, 3 to 4 cents, March 4; South Dakota, 2 to 3 cents, March 10; Idaho, 2 to 3 cents, March 11; New Mexico, 1 to 3 cents, March 18; South Carolina, 3 to 5 cents, March 24; Oklahoma, 2½ to 3 cents, March 25; Utah 2½ to 3½ cents, April 1; Indiana, 2 to 3 cents, April 1; Wyoming, 1 to 2½ cents, April 1; Nevada, 2 to 4 cents, April 1; Vermont, 1 to 2 cents, July 1; West Virginia, 2 to 3½ cents, July 1; Maine, 1 to 3 cents, July 11, and Georgia, 3 to 3½ cents, August 26.

In addition to these State taxes, New Orleans put into effect a city tax of 1 cent, making the total tax there 3 cents.

Only four States now have no gasoline tax. These are Massachusetts, New York, New Jersey and Illinois. Movements have been put on foot in these States a number of times recently to obtain gasoline taxes.

AVERAGE PRICES

Average tank wagon prices in 50 representative cities for the past three years follow:

	1923	1924	1925
Jan. 1	19.21	14.32	13.918
Feb. 1	19.33	17.68	16.74
March 1	21.53	18.87	19.06
April 1	21.46	18.85	18.68
May 1	20.56	18.85	18.352
June 1	19.95	18.61	19.122
July 1	19.89	17.66	19.387
Aug. 1	19.11	16.5	19.413
Sept. 1	16.24	15.75	16.703
Oct. 1	15.77	13.95	15.808
Nov. 1	14.45	13.75	15.528
Dec. 1	13.66	13.87	15.763
Average	18.43	16.555	17.372
Jan. 1, 1926			16.173

CHICAGO TANK WAGON

Following are the daily average tank wagon prices at Chicago for the past 13 years:

1913	14.84c
1914	12.07c
1915	11.04c
1916	17.16c
1917	20.03c
1918	22.27c
1919	22.15c
1920	25.45c
1921	20.28c
1922	20.23c
1923	17.05c
1924	14.68c
1925	16.27c

ALL CHANGES DURING THE YEAR. ALSO THE HIGH AND LOW PRICES OF 1923 AND 1924

DATE OF CHANGE				Prices Jan. 1, 1926	High and Low Prices 1925		1924		1923		Taxes Jan. 1, 1924	Jan. 1, 1925	Jan. 1, 1926
				17.0	20.0	13.0	20.0	13.0	20.0	14.0	2.0	2.0	2.0
				20.0	20.0	18.0	20.0	16.0	22.5	17.5	3.0	3.0	3.0
12/4	12/29			14.5	14.0								
				14.0	19.0	12.0	18.0	13.0	20.5	12.5	4.0	4.0	4.0
				14.0	15.0	13.0	15.0	11.0	19.0	12.0	2.0	2.0	2.0
				16.0	20.0	12.0	19.0	12.0	20.0	11.0	2.0	2.0	2.0
				17.0	21.0	15.0	20.0	13.0	24.5	15.5	1.0	1.0	2.0
				17.0	21.0	15.0	20.0	14.0	23.0	14.0	1.0	2.0	2.0
				16.0	19.0	12.0	19.0	12.0	20.0	13.0	3.0	3.0	4.0
				18.0	21.0	14.0	19.0	11.0	22.0	13.0	3.0	3.0	3.5
				20.0	21.5	19.5	22.5	18.0	24.0	18.0	2.0	2.0	3.0
				10.5	19.2	10.5	18.2	13.0	20.8	12.2	...	...	...
				15.0	18.0	13.0	18.0	13.0	20.0	12.0	...	...	...
				16.2	19.2	13.2	18.2	13.2	20.8	12.2	2.0	2.0	3.0
				16.5	19.5	13.5	18.5	13.5	21.1	12.5	...	...	2.0
				15.8	18.8	8.8	17.8	12.8	20.4	11.8	...	...	2.0
11/20		12/4	12/29	17.0	19.0	12.0	19.0	12.0	21.0	13.0	1.0	3.0	3.0
13.5		14.0	13.5	13.5	18.5	11.5	16.5	11.5	19.5	10.5	1.0	2.0	3.0
				17.0	22.0	15.0	19.0	13.0	24.5	15.5	1.0	1.0	3.0
				15.0	19.0	13.0	19.0	13.0	22.5	15.0	2.0	2.0	2.0
				17.0	21.0	15.0	20.0	13.0	24.5	14.5	...	...	...
				16.8	19.8	13.8	18.8	13.8	21.8	13.2	...	...	2.0
				15.5	20.5	13.5	19.2	14.5	21.5	12.9	...	...	2.0
				15.5	18.5	11.5	18.5	11.5	20.0	12.5	1.0	3.0	3.0
				15.9	18.9	12.9	17.9	11.9	19.5	10.9	1.0	3.0	3.0
				21.0	24.0	18.0	23.0	18.0	23.5	18.0	2.0	2.0	2.0
				16.25	19.25	10.0	18.25	11.0	20.5	12.25	...	...	2.0
				17.5	18.5	16.5	18.5	14.5	22.5	15.5	2.0	2.0	4.0
				15.0	19.0	13.5	19.5	13.5	23.5	15.5	...	...	...
				20.5	23.5	19.5	23.0	18.0	25.5	17.0	1.0	1.0	3.0
				17.0	22.0	15.0	20.0	14.0	24.5	15.5	...	...	...
				15.0	20.0	12.0	19.0	12.0	21.5	15.0	3.0	3.0	4.0
				18.9	20.9	14.9	19.6	14.9	24.3	13.6	1.0	1.0	1.0
				16.0	18.5	15.0	20.0	16.0	21.0	16.0	...	...	2.0
				14.0	18.0	9.5	18.0	9.5	20.0	8.0	1.0	2.5	3.0
				14.0	16.0	13.0	16.0	12.0	20.0	13.0	3.0	3.0	3.0
				17.0	21.0	15.0	20.0	14.0	23.0	14.0	2.0	2.0	2.0
				17.0	22.0	15.0	20.0	13.0	24.5	15.5	...	...	1.0
				15.0	20.5	12.5	19.0	12.5	22.0	15.0	3.0	3.0	5.0
				14.0	20.0	13.0	20.0	15.0	22.5	14.0	2.0	2.0	3.0
				13.5	18.0	10.5	18.0	12.0	20.0	12.0	2.0	2.0	3.0
				14.0	18.0	10.0	17.0	9.0	19.0	6.0	1.0	1.0	1.0
				18.5	21.5	17.5	21.5	16.5	23.0	15.5	2.5	2.5	3.5
				19.0	22.0	15.0	19.0	13.0	24.5	15.5	1.0	1.0	2.0
				15.0	20.0	14.5	19.0	14.5	21.5	15.0	3.0	3.0	3.0
				15.0	19.0	14.0	19.0	14.0	23.0	15.0	...	2.0	2.0
				15.0	19.0	14.0	19.0	14.0	23.0	15.0	2.0	2.0	3.5
				16.1	19.1	13.1	18.1	13.1	19.6	12.0	...	...	2.0
				17.0	20.0	14.0	19.0	14.0	18.0	13.0	1.0	1.0	2.5
				14.0	15.0	13.0	16.0	12.0	20.0	13.0	2.0	2.0	2.0
				15.2	20.3	13.2	18.9	12.0	....	....	...	...	2.0
				16.133	19.667	13.638	18.99	13.27	21.71	13.65	1.32	1.76	2.34

follows: On purchases over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. The same rule applies for annual discounts as with the Standard Oil Co. of Indiana.

GASOLINE PRICES REASONABLE GOVERNMENT REPORT FINDS

By Victor Lauriston

CHATHAM, Ont., Feb. 6.—A report just made by G. T. Clarkson, appointed by the Ontario Provincial Government to investigate gasoline prices, states that prices are fair and reasonable.

The investigation was undertaken at the request of Toronto, London, and a number of other Ontario municipalities, Mr. Clarkson being appointed under special order-in-council as a commissioner to investigate the cost of gasoline to the motoring public. The report is based on questionnaire information, sworn evidence and statements and balance sheets and accounts of various companies and organizations operating in Ontario. In his report Mr. Clarkson states in part:

"I find, and report, that the prices charged were reasonable and fair for gasoline sold to the people of Ontario in the period between January 1, 1924, and July 15, 1925—this having regard to the extent of the profits recovered and losses sustained by the refiners and wholesale dealers, notwithstanding certain conditions hereinbefore set out." The report continues:

Lubricating Oil Prices

"Sales of automobile lubricating oils amount to between 3 per cent and 4 per cent in volume of the quantity of gasoline sold in Ontario, and the prices at which such oils are ordinarily sold vary between 100 per cent and 200 per cent in advance of their cost to wholesale dealers. Net earnings obtained by refiners, wholesale dealers and retailers show that these margins do not leave unreasonable or excessive net profits, but that they are largely absorbed by costs of administration, selling, advertising, packages and handling to wholesale dealers, and by handling and other attendant expenses to retailers.

"Analyses of samples obtained during July and August, 1925, show that many of the gasolines then being sold in Ontario were of superior quality, and all of those analyzed with one exception—an imported product—were within U. S. Motor gasoline specifications. In the case of the exception mentioned it was admitted that it had been purchased on a price and gravity basis without further specifications as to quality."

Mr. Clarkson states that evidence was submitted to him that the wholesale dealers had no association, understanding or agreement in existence which had for its purpose the fixing of prices for gasoline in Ontario. "Lists of stockholders with information as to share warrants outstanding were submitted, and evidence given that so far as known no common ownership of shares existed," states Mr. Clarkson. "It was further testified by the officers of each company that it had no interest, direct or indirect, in the ownership of any other companies or in the conduct or administration of their affairs. I accept such evidence."

"It was admitted by the other refiners and wholesale dealers who were examined that they had each adopted the policy of following prices set by Imperial Oil, Ltd., in respect of gasoline manufactured and sold by it in Ontario, and this course was upheld by them as conforming to ordinary trade practices—in view of the predominant position held by Imperial Oil, Ltd., in the trade in Canada—and justified by them on the grounds of advantage and necessity."

"Distress" Gasoline

Mr. Clarkson finds that in the year 1924 a heavy overproduction of gasoline took place in the United States, and large quantities were forced on the market and sold at "reduced and distress" prices.

"Canadian refiners, with stocks of crude oils on hand and commitments to purchase, were unable to meet the prices at which such gasolines could be imported into Ontario and sold, except at the cost

of losses," says the report. "Accordingly they continued to charge—so far as they were able to do so—rates which were commensurate with the costs of crude oils to them. As a result of the adoption and carrying out of such policy prices for gasolines in Toronto—and many other points in Ontario—exceeded relative prices at Buffalo, Chicago, Cleveland and Detroit in amounts varying between ¼ cent and 5½ cents (in an extreme case) per imperial gallon at times within the period between March 1 and November 1, 1924. Variations in prices also obtained between retail rates at many points in Ontario and in the most extreme case testified to a difference of 10 cents per imperial gallon occurred."

INCREASED STABILITY WAS FEATURE OF EASTERN MARKETS DURING 1925

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Feb. 15.—Increased stability featured the Eastern refined oil markets in 1925. Changes in prices during the year were comparatively narrow, and at the close were almost the same as those prevailing at the close of 1924.

Gasoline prices at the end of 1925 were fractionally higher than at the close of the preceding year. Kerosene in bulk was the same, but the tank wagon market was somewhat higher.

Lubricating oils were somewhat consistently weak during 1925, and prices at the end were lower than at the beginning of the year. The largest decline was in cylinder oil, which declined about 3½ cents a gallon net during the year. Other "lubs" were fractionally lower.

Fuel oil tended slightly lower in 1925, but gas oil continued firm. Paraffin wax and petrolatum changed only fractionally.

The rise in the kerosene tank wagon market was one of the outstanding developments of 1925. Beginning at the close of October, the New York tank wagon price advanced from 13 to 15 cents on December 1, at which figure it closed the year.

Refinery prices at New York at the close of 1925 and 1924 are shown in the following table (cents per gallon):

	12-31-25	12-31-24	Change
U. S. Motor Gasoline	13	12½	Inc. ½
Export Gasoline	16	16	.....
Prime White Kerosene	07	07	.....
Fuel Oil, 14-16	*165	*180	Dec. *15
Gas Oil, 28 plus	05¼	05¼	.....
Cylinder Oil, 600 s.r., filt.	29	32½	Dec. 3½
Pale Oil, "25", 3¼ col.	12	12½	Dec. ½
Paraffin Wax, ref., 120-122	§06¼	§06	Inc. ¼
Petrolatum, amber	§03⅜	§03½	Dec. ⅛

*Cents per bbl. §Cents per pound.

Gasoline

The gasoline market on the Atlantic Seaboard during 1925 was marked by cross-currents. On the whole, a surplus of gasoline in the hands of refiners and jobbers was evident, and price cutting broke out for a short time, especially in the fall of the year. That the situation was not so bad as it was painted by many was indicated by the refusal of big refiners to reduce their quotations to meet competition, which bore out the contention that the lower priced gasoline was in many instances of inferior quality.

There was an epidemic of service station building in 1925, throughout the Atlantic Seaboard. This territory was invaded on a large scale by several companies that had formerly sold only to jobbers or to service station dealers not identified with their own organization. Among the companies that were noticed to have spread out by building their own service stations were Pure Oil, Pan American Petroleum and Atlantic Refining.

The Standard Oil Co. of New York seemed to continue the policy of not building its own service stations, but to offset this it is understood the company helped finance the construction of several chains of stations, which are owned and operated by independent dealers. These stations are generally of uniform construction, and, of course, handle "Socony" products, exclusively, under contract.

Other companies, such as Gulf Refining, The Texas Co., Standard Oil of New Jersey and Tide Water, added largely to their already substantial chains of retail stations.

This branching into the retail field by the large oil refiners has had and will in the future have a great bearing on gasoline service and prices. Already the large companies, owning their own stations, have less gasoline to offer jobbers and independents, as they market a larger percentage of their output themselves. This should further eliminate destructive competition, although it might be expected that any price war which might break out among the larger companies would be serious enough.

Furnace Oil

The coal strike affecting thousands, if not millions, of hard coal users, has had a direct bearing in stimulating the sale of furnace oil, an oil slightly lower in gravity than kerosene, and used in many domestic oil burners. In addition burners use grades of fuel oil ranging as low as 25 gravity. Manufacturers of the various types of oil burners used in homes in the East have thrived as a result of the appreciation of the advantages of oil-burning, brought about partly by the coal strike.

The use of oil for home oil burners has eaten considerably into the fractions of distillation formerly classed as "kerosene," and to this is attributed in large measure the sudden strength in kerosene tank wagon prices already mentioned. It is noticed that refinery kerosene prices did not advance in sympathy with the tank wagon market, inasmuch as the use of kerosene as such, that is for lighting and kerosene stoves, did not show a corresponding gain with that of furnace oil.

Fuel Oil

Fuel oil quotations during 1925 were steady, with changes narrow. At the close of the year the tendency was strong, largely as a result of improvement in the California situation.

Diesel oil furnished the real feature of the fuel oil situation, the use of this grade of fuel oil growing beyond all expectations, while consumption of bunker fuel oil did not grow proportionately. The conversion of many vessels from the steam engine to Diesel engine class went on at a rapid pace, and new construction consisted at least 50 per cent of "motorships," or ships using Diesel engine propulsion.

In addition, the use of Diesel engines on land for manufacturing plants, electric locomotives and so on, took hold in a remarkable manner.

Diesel oil is of higher grade than fuel oil, averaging 28-30 degrees Baume, and the large consumption of this grade is bound to have a helpful effect on the oil industry, for it is consuming oil which might otherwise be used for cracking and therefore might compete with crude oil; in addition it prevents a large oversupply of fuel oil, for use as such.

Lubricating Oil Market

During 1925 the market for lubricants sagged off somewhat as the result of large stocks on hand and slightly lower consumption by certain industries, and also because of a less favorable export demand. The eastern lubricant market is more closely related to the export demand because eastern refineries are the largest makers of "lubs" for export.

The export demand on the Atlantic Seaboard for cylinder oils fell off considerably toward the close of the year, with the result that domestic prices sagged considerably. At the close of the year prices were 2 to 4 cents a gallon lower than at the beginning.

Cylinder oils displayed more weakness than red oils or pale oils, which declined only fractionally.

Wax prices during 1925 remained almost unchanged. The extreme change of ¼-cent a pound occurred in 135-137 a.m.p. refined wax, which advanced from 7¼ to 7½ cents in late summer, but declined again to 7¼ in September. The lower melting points did not change at any time more than ⅛-cent a pound. Prices on the whole in 1925 were slightly below those prevailing in 1924, when 135-137 a.m.p. sold up to 8 cents a pound.

Petrolatum

The market for petrolatums was good during the first half of 1925, but slumped during the last half, with prices reaching lowest levels about November, when amber sold as low as 3 cents a pound. The demand appeared to improve at the close of the year, with a recovery of ⅜ cents.

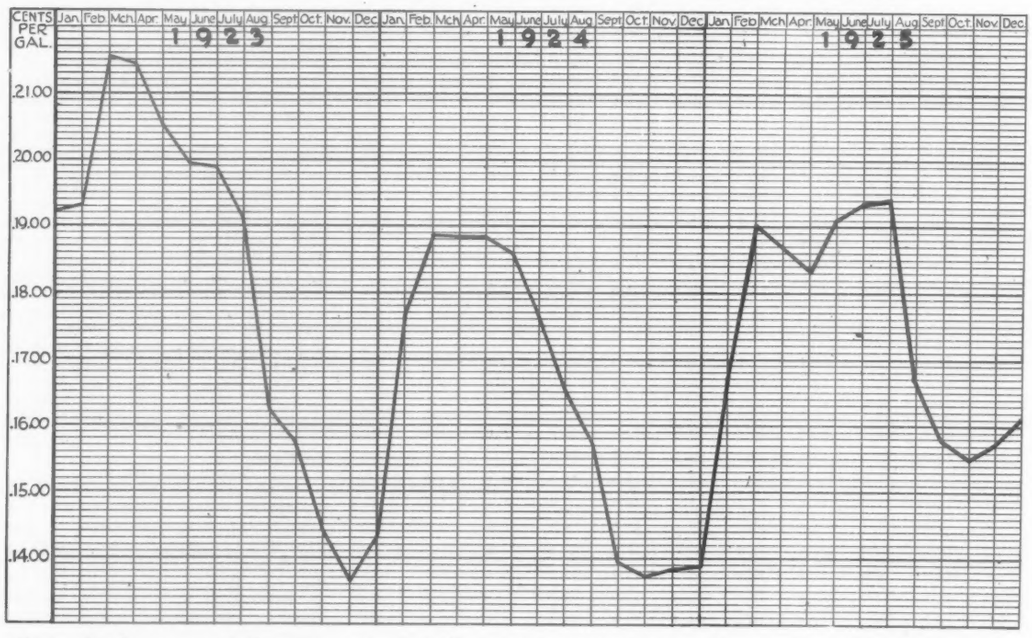
Outlook for 1926

The outlook for the eastern refined oil markets for 1926 is bright, but it must be pointed out that the production of crude oil is a dominant factor in refined oil prices. Record consumption of almost all products is promised—especially of gasoline, lubricants and fuel oil. But prices will nevertheless fall if there is a big overproduction of crude during the year.

OIL AND GAS FIRE LOSS

According to the National Bureau of Fire Underwriters, petroleum and its products dropped below "lightning" in fire losses in 1924. The brunt of the loss fell on the State of California, where $1,190,055 in property destruction was recorded. Texas, with $1,083,510, ran a close second, and New York also was hit severely with a loss amounting to $847,590. For the United States the aggregate was $11,619,306. Gas, natural and artificial, as a fire cause, exhibited little change in 1924 compared with its position in the preceding twelve months. The loss in the latest year was $3,376,808, with Ohio, New York and Texas leading the field.

AVERAGE TANK WAGON PRICES IN 50 REPRESENTATIVE CITIES



Graph showing average tank wagon prices exclusive of tax at 50 representative cities on the first day of each month during 1923, 1924 and 1925.

Average gasoline tank wagon prices on the first day of each month, exclusive of tax, were as follows: 1923, 19.21 cents, January 1; 19.33 cents, February 1; 21.53 cents, March 1; 21.46 cents, April 1; 20.56 cents, May 1; 19.95 cents, June 1; 19.89 cents, July 1; 19.11 cents, August 1; 16.24 cents, September 1; 15.77 cents, October 1; 14.45 cents, November 1; 13.66 cents, December 1, 1924, 14.32 cents, January 1; 17.68 cents, February 1; 18.87 cents, March 1; 18.85 cents, April 1; 18.85 cents, May 1; 18.61 cents, June 1; 17.66 cents, July 1; 16.5 cents, August 1; 15.75 cents, September 1; 13.95 cents, October 1; 13.75 cents, November 1; 13.87 cents, December 1; 13.918 cents, January 1, 1925; 16.74 cents, February 1; 19.06 cents, March 1; 18.68 cents, April 1; 18.352 cents, May 1; 19.122 cents, June 1; 19.387 cents, July 1; 19.413 cents, August 1; 16.703 cents, September 1; 15.808 cents, October 1; 15.528 cents, November 1; 15.763 cents, December 1; 16.173 cents, January 1.

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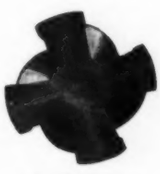

End View Two Cutting Edges Four Cutting Points

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Jobbers Accepting Lower Margins

Spreads Under New Agreements Substantially Reduced. Sales Manager Suggests a Percentage of Retail Price for Contracts

By C. O. Willson

As has been explained in previous articles appearing in The Oil and Gas Journal, refiners and independent jobbers during the past few weeks have had considerable difficulty in arriving at terms satisfactory to both covering gasoline contracts for this year. Due to the relatively narrow margins which have existed between the open tank car market of the refiners and the tank wagon or service station schedules of the major marketing companies, the former have generally been unwilling to renew their agreements with the jobbers on the basis in effect during the past two years.

The marginal contracts based on tank wagon schedules which have been closed for 1926 have, with rare exceptions, given a much narrower margin. Most of the contracts have been based on margins not exceeding 4½ cents under the tank wagon schedules or 6½ cents under the service station, not including freight. A few, at least, have been negotiated on a basis as low as 4 cents, a type of agreement which was general previous to the period of wide margins which started in 1923 and which in 1924 and 1925 brought yearly agreements with margins of 5 to 5¾ cents under the tank wagon.

One of the changes in many new agreements has been the basing of contracts on the service station rather than the tank wagon schedules as has been done in the past. Instead of making the contracts read 4 cents under the tank wagon the spread is 6 cents under the service station. The tank wagon, especially in the states of the Middle West has been gradually losing its importance as a market factor for the past year or two. Originally it accurately represented the price at which the jobber and the major distributors sold their gasoline to the garage, storekeeper and others who retailed the gasoline. In the early days of gasoline distribution the margin allowed the retailer was usually 1 cent.

Due to competition this margin was increased to 2 cents and for a time the wider spread was generally accepted and followed by all. However, the larger retailers have more recently had little difficulty in securing more liberal terms and in many sections the tank wagon has in effect meant all the way from 2 to 4 cents under the service station price. The quantity discount plan inaugurated by the Standard of Indiana and many other large distributors during the past year was a recognition of this condition. Furthermore, there have been cases where jobbers with contracts have suffered due to the fact that their competition lowered their service station prices below the official tank wagon price. This "juggling" of the tank wagon schedules has become so common that predictions are occasionally heard that the major marketing organizations will in the near future cease to consider them as a part of their retail market and will confine themselves to service station quotations. Due to this condition many refiners and jobbers have been willing to accept the service stations as a basis for their contracts. There will be numerous contracts, however, in 1926 based on the tank wagon.

There are also some agreements being based on the spot market as determined by trade journal quotations on date of shipment. Refiners at the present time are generally more favorable toward this type of contract than the jobbers. With this type of contract many of the latter are forced to operate at the present time on a margin under 4 cents and naturally they prefer an agreement which guarantees them wider margins regardless of quotations on the open market.

The usual compromise is apparent in many of the new agreements. The jobber has been forced to be content with a narrower margin but at the same time he will share with the refiner any exceptionally wide margins between the open tank car prices and the tank wagon schedules.

Some contracts are based on a 4½-cent margin under the tank wagon with provisions, however, which give the jobber one-half of any spread in excess of 4½ cents between the tank car and tank wagon schedules. Thus, if the margin between the open tank car market as determined by trade publications and the tank wagon schedules should be 5 cents the jobber's margin under the contract would be 4¾ cents. One agreement reported to have been offered fixes the maximum jobber's margin under this provision at 5 cents.

Another type of agreement is based on the open market but guarantees the jobber a 3-cent minimum margin. That is, regardless of how narrow the margin between the gasoline tank car and tank wagon becomes the jobber has at least a 3-cent margin on which to operate. The refiner at the same time, in some cases has protected himself with a maximum margin should the spread become exceptionally wide. Usually this maximum margin is 5 cents with the refiner and seller sharing equally any spread in excess of 5 cents.

General Features Same

It will be noted that the general features of these agreements are largely the same as were in effect last year. The only noteworthy difference is the substitution of service station for tank wagon and the lower margins previously mentioned, a recognition on the part of both the buyer and seller that the jobbers in order to meet competition must during the present year operate with lower marketing costs. Although quite a number of contracts have been reported as closed during the past two weeks the amount of gasoline moving out of the Mid-Continent area on long time agreements at the present time is probably less than at any time in several years.

While some refiners are working for the elimination of all contracts based on anything but the spot tank car market, there are others who continue to give considerable thought to improving agreements in which the tank wagon or service station—the jobber's market—is the basis. Their ultimate aim is to overcome all the valid objections to be made to this type of agreement and thus bring a return to their former status among refiners and jobbers.

New Agreement Suggested

In commenting on a recent article appearing in The Oil and Gas Journal, D. A. Corcoran, sales manager of the Cameron Refining Co., of Ardmore, Okla., suggests a type of contract the main features of which are shown in the accompanying table and diagram. While the principle involved in Mr. Corcoran's proposed contract is not entirely new, his method of application, so far as the writer knows, has never before been suggested.

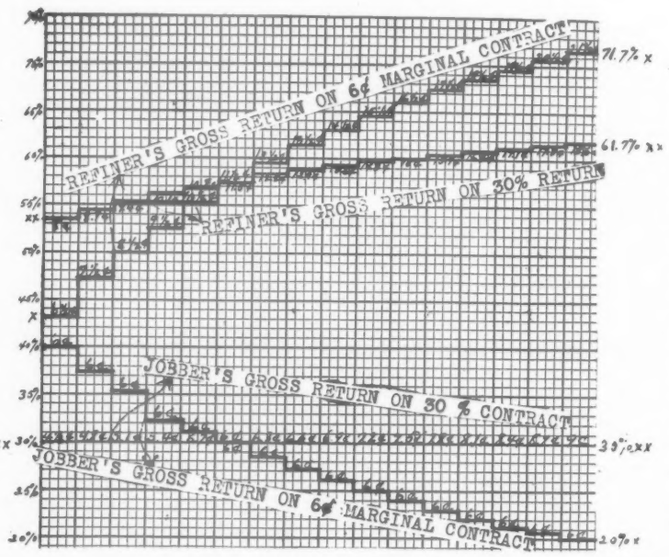
"I have often wondered why the words 'gross profit' or 'net profit' never seem to appear in marginal contracts," Mr. Corcoran says in his letter of explanation, "profits and not so many cents per gallon is what we are all striving for."

Mr. Corcoran's proposal is an attack on the present practice of having a flat margin to the jobber regardless of fluctuations in the tank car and retail markets. He points out that it is obviously unfair to have the jobber margin the same when gasoline is retailing at 15 cents as when the price is 25 or 30 cents.

A study of the table and diagram will quickly show the conditions which his plan will remedy. The contract is based on the service station price rather than what Mr. Corcoran terms the "semi-mythical tank wagon." In the lines labeled "X" he shows the effect of a flat 6-cent margin contract to both the refiner and jobber, starting with a retail price of 15 cents and ending at 30 cents. He assumes a representative freight rate of 2½ cents per gallon covering transportation charges from the refinery to the point of destination.

Table and Graph Showing Workings of a Typical 6-Cent Contract Based on Service Station Price and a Proposed Contract Based on 30 Per Cent of the Retail Price.

Service Station Price	6-Cent Marginal Contracts — Refiner's Return Total	Refiner's Return Percentage	Jobber's Return Total	Jobber's Return Percentage	30% Contract — Refiner's Return Total	Refiner's Return Percentage	Refiner's Return Total	Refiner's Return Percentage
15c	6.5c	43.3%	6c	40.0%	8.0c	53.3%	4.5c	30%
16	7.5	47.5	6	37.5	8.7	54.3	4.8	30
17	8.5	50.0	6	35.3	9.4	55.3	5.1	30
18	9.5	52.8	6	33.3	10.1	56.1	5.4	30
19	10.5	55.2	6	31.3	10.8	56.8	5.7	30
20	11.5	57.5	6	30.0	11.5	57.5	6.0	30
21	12.5	59.5	6	28.6	12.2	58.1	6.3	30
22	13.5	61.4	6	27.3	12.9	58.6	6.6	30
23	14.5	63.0	6	26.0	13.6	59.1	6.9	30
24	15.5	64.5	6	25.0	14.3	59.6	7.2	30
25	16.5	66.0	6	24.0	15.0	60.0	7.5	30
26	17.5	67.3	6	23.0	15.7	60.4	7.8	30
27	18.5	68.5	6	22.0	16.4	60.7	8.1	30
28	19.5	69.6	6	21.4	17.1	61.1	8.4	30
29	20.5	70.7	6	20.7	17.8	61.4	8.7	30
30	21.5	71.7	6	20.0	18.5	61.7	9.0	30


REFINER'S GROSS RETURN ON 6¢ MARGINAL CONTRACT
71.7% x
REFINER'S GROSS RETURN ON 30% RETURN
61.7% xx
JOBBER'S GROSS RETURN ON 30 % CONTRACT
30% xx
JOBBER'S GROSS RETURN ON 6¢ MARGINAL CONTRACT
20% x

How It Works

Starting with a retail price of 15 cents, the distribution would be 6½ cents to the refiner, 6 cents to the jobber and 2½ cents for freight. Based on percentage this is 43.3 per cent to the refiner, 40 per cent to the jobber and 16.7 per cent to the railroads.

As the service station price increases the refiner's per cent of the retail price gradually increases with a decline in the jobber's. Finally, as shown in the table and diagram, when a 30-cent retail price is reached the refiner is getting 71.7 per cent of the total, the jobber only 20 per cent, with the remaining 8.3 per cent for transportation.

Mr. Corcoran believes that a contract of this type, which is typical of many now in effect, is wrong in principle and works an unnecessary hardship on both the buyer and seller. It is needless to state that in practically all other lines of business the jobbers' margin bears a percentage relationship to the amount he secures for the product. For instance the wholesale or retail grocer does not secure the same flat margin of profit for an article selling at 10 cents as that selling for 15 or 25 cents. If his margin is 2½ cents in the case of the 10-cent article, it will ordinarily be 5 to 7 cents in the case of the 25-cent product. In other words the percentage of gross return to the jobber is practically the same regardless of the retail price of the article.

This common practice in merchandising is a recognition of the fact that the jobber's marketing costs bear a close relationship to the amount of capital required to handle the business. It is unnecessary to explain in the case of the gasoline jobber that his actual cost charges per gallon are more when the retail price is 20, 25 or 30 cents than when it is 15 cents.

Suggested Remedy

To remedy this situation, Mr. Corcoran suggests a contract in which the jobber would be guaranteed a 30 per cent gross profit or return at all times depending on the retail price. The working of this proposed plan is also shown in the table and diagram. In making a straight line out of the return to the jobber, the wide variations in the line showing the gross return to the refiner are eliminated.

In this particular application of the plan the jobber's margin would be less than 6 cents until a 20-cent retail price was reached. Then it would gradually increase so that in the event a 30-cent retail price was reached his margin would be 9 cents a gallon. In the case of the refiner, he obtains a wider margin than he would secure under a flat 6-cent margin up to 19 cents. From that point, as shown in the diagram, his gross return becomes less and less when compared to the flat 6-cent contract. Finally instead of getting 21½ cents when the retail price is 30 cents he would secure 18½ cents or 61.7 per cent of the total. The

(Continued on Page 156-A)

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Refinery Statistics for Year 1925

An Average of About 98 per cent of the Current Supply of Crude Oil and Its Products Was Used

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

Two outstanding and highly significant "basic trends" marked the operation of the refining industry in the last three years. The percentage of gasoline recovery is being constantly increased. And the gallonage output in the five major refining areas is shifting rapidly.

In 1923 the gasoline recovered from crude run to stills was 30.9 per cent. In 1924 it was 33.1 per cent. And in 1925 it was 34.9 per cent.

In 1925 we made 10,849,000,000 gallons of gasoline from 740,000,000 bbls. of crude run to stills. And if we had made this gasoline on the same recovery that we got in 1923 (30.9 per cent), we would have had to run 836,000,000 bbls. of crude to stills.

It would seem logical, therefore, to claim that advancement in the refining industry actually "saved" 96,000,000 bbls. of crude oil in 1925. And this claim seems more reasonable because the average crude run to stills in 1925 was of lower gasoline content than the crude run in 1923.

The variation in the increase in the gallonage output of gasoline by the five major refining areas in the last three years shows very significant trends as will be seen by carefully studying Table 1. In 1925 the Kansas-Oklahoma area produced 760,000,000 gallons more gasoline than in 1923. This was an increase of 60 per cent. The Texas Gulf Coast area showed an increase of 747,000,000 gallons over 1923—or 81 per cent. The Indiana-Illinois area showed an increase of 456,000,000 gallons over 1923—or 45 per cent. California's gasoline output increased 445,000,000 gallons—or 35 per cent over 1923, while the East Coast's output increased 345,000,000 gallons, or 25 per cent.

Refining Areas Compared

The oil industry has always looked to the East Coast as being the very heart of its refining end—and yet we find that, since 1923, the output of the Texas Gulf Coast area has increased 81 per cent—the Kansas-Oklahoma area, 60 per cent—the Indiana-Illinois area, 45 per cent—California, 35 per cent—and the East Coast, 25 per cent.

It would be idle to claim that the East Coast refineries could not have made as large an increase in 1925 as they made in 1924 (279,000,000 gallons). And it would not be hard to guess what would have happened to the gasoline market if the East Coast refineries had not reduced their runs in 1925. And even though their gasoline recovery in 1925 was 32.3 per cent compared with 29.5 per cent in 1924, they increased their gasoline output less than 4 per cent. The Indiana-Illinois area increased their output over 24 per cent—the California area increased about 29 per cent—the Texas Gulf Coast area over 31 per cent—and the Kansas-Oklahoma area over 32 per cent. And all of these changes in increased output took place in 1925 as compared with 1924. These percentages show the "shift" that is going on today in the industry—changes that presage a far-reaching realignment of the refining industry, areally at least.

Percentage Recovery

Referring to the gasoline percentage recovery column in Table 1 it is interesting to note that in 1923 the Kansas-Oklahoma recovery was 42.5 per cent—in 1924, it was 45.8 per cent— and in 1925 it was 49.0 per cent.

Just exactly what this increase in percentage means is shown by the fact that if in 1925 the Kansas-Oklahoma refineries had made their 2,015,000,000 gallons of gasoline on a recovery of 42.5 per cent (the recovery in 1923) they would have had to run to stills over 112,000,000 bbls. of crude. This would have been 15,000,000 bbls. more than was actually run. As the crude run to stills in this area averages about 36 gravity, the price of which was about $1.87 a barrel last year, it would seem that the Kansas-Oklahoma refiners had actually saved themselves $25,000,000—and the industry 15,000,000 bbls. of crude—for all of which they should receive due credit.

Among the many interesting things in Table 1 is the rather startling fact that in 1923 the Kansas-Oklahoma area made 1,255,000,000 gallons of gasoline and ended the year with 138,000,000 gallons in storage. In 1924 it made over 1,500,000,000 gallons with 121,000,000 gallons in storage. And in 1925 it made over 2,000,000,000 gallons with 118,000,000 gallons in storage. An increase in two years of 760,000,000 gallons in production—and a decrease of 20,000,000 gallons in storage.

The Texas Gulf Coast fared almost as well. In two years its production increased 747,000,000 gallons—and its storage 42,000,000 gallons.

Situation in California

Gasoline in storage in California at the close of 1923 was really about 293,000,000 gallons as the stocks for both January 1 and December 31, 1923, have not been revised by the addition of about 100,000,000 gallons, whereas the stocks for 1924 and 1925 have been revised. In two years stocks have increased over 100,000,000 gallons—but production has increased 445,000,000 gallons.

Indiana-Illinois area stocks went up only 16,000,000 gallons whereas production went up 285,000,000 gallons.

Taking the United States as a whole production went up 1,890,000,000 gallons in 1925 while stocks went up 354,000,000 gallons. In 1924 the average daily demand (consumption plus exports) was 24,600,000 gallons and the average daily stock was 1,376,000,000 gallons—or 56 days' supply. In 1925, the average daily demand was 29,2000,000 gallons atnd the average daily stock 1,615,000,000 gallons—or 55 days' supply.

It would appear therefore that our present stocks, large as they "sound," are not at all out of line with the average daily demands made upon them.

Table 5—Gasoline Balance Sheet for 1925

	Gallons
Stock January 1	1,294,472,377
Production	10,849,127,707
Imports	160,136,919
Total	12,303,737,003
Exports	1,330,314,088
Domestic demand	9,325,094,915
Stock December 31	1,648,328,000
Total	12,303,737,003
Total current supply	11,009,264,626
Total current demand	10,655,409,003
Part of current supply used...	96.8%

In the last three years the crude oil run to stills has steadily increased. The percentage of kerosene recovered has steadily decreased. And the gallonage output has remained about constant—around 2,500,000,000 gallons. Imports are negligible. In 1925, we made over 800 times as much kerosene as we im-

TABLE 1—Gasoline Production, Shipments and Stocks for 1923, 1924 and 1925, With Crude Run to Stills and Percentage of Gasoline Recovered

AREA:	Crude Run to Stills Barrels	Gasoline Recovered Per Cent	*Product'n Gallons	†Shipments Gallons	Stock January 1	Stock December 31
Kansas-Oklahoma:						
1923	70,288,792	42.5	1,255,269,897	1,277,577,821	160,507,722	138,199,798
1924	79,700,776	45.8	1,619,857,208	1,537,014,905	138,199,798	121,042,101
1925	97,611,730	49.0	2,015,095,692	2,017,591,793	121,042,101	118,546,000
Texas:						
North and Central						
1923	22,011,969	32.6	301,098,124	304,261,285	13,090,637	9,927,476
1924	30,992,435	34.8	453,192,326	445,098,044	9,927,536	18,021,818
1925	35,956,260	37.4	546,333,573	557,805,391	18,021,818	24,550,000
Arkansas-N. Louisiana:						
1923	8,734,615	21.0	77,001,174	76,871,025	2,422,639	2,552,788
1924	12,662,774	19.4	103,508,115	101,153,769	2,552,788	4,907,134
1925	16,239,038	19.2	130,966,302	131,521,436	4,907,134	4,352,000
Total, Mid-Continent:						
1923	**101,035,376**	**38.4**	**1,633,369,255**	**1,658,710,131**	**176,020,998**	**150,680,122**
1924	**123,355,985**	**40.0**	**2,076,557,649**	**2,083,266,718**	**150,680,122**	**143,971,053**
1925	**149,807,028**	**43.1**	**2,710,395,567**	**2,706,918,620**	**143,971,053**	**147,448,000**
Texas, Gulf Coast:						
1923	81,362,104	27.0	926,377,554	888,537,755	105,632,134	137,471,933
1924	94,032,884	32.4	1,280,149,952	1,281,219,748	137,471,933	136,393,137
1925	108,325,103	36.6	1,667,151,745	1,623,780,882	136,393,137	179,764,000
Louisiana, Gulf Coast:						
1923	32,071,581	26.5	356,461,326	338,068,967	88,647,288	107,039,647
1924	36,753,880	27.1	417,996,297	443,967,624	107,039,647	81,068,320
1925	50,758,361	21.4	498,852,727	373,679,047	81,068,320	206,242,000
Total, Gulf Coast:						
1923	**113,433,685**	**26.8**	**1,276,838,880**	**1,226,606,722**	**194,279,422**	**244,511,580**
1924	**130,786,764**	**30.9**	**1,698,137,249**	**1,725,187,372**	**244,511,580**	**217,461,457**
1925	**159,083,464**	**32.4**	**2,166,004,472**	**1,997,459,929**	**217,461,457**	**386,006,000**
Rocky Mountain:						
1923	27,175,700	55.4	632,210,387	631,863,726	103,241,253	103,587,914
1924	26,737,336	57.0	639,679,105	627,430,550	103,587,914	115,836,469
1925	26,164,102	55.7	611,654,238	562,207,707	115,836,469	164,283,000
California:						
1923	150,205,980	20.3	1,283,200,165	1,190,786,190	99,366,400	191,780,375
1924	149,279,988	21.4	1,341,721,098	1,208,265,136	293,488,882	426,944,844
1925	184,180,385	22.3	1,728,882,522	1,750,611,366	426,944,884	405,216,000
East Coast:						
1923	116,759,092	28.5	1,399,641,744	1,340,094,614	186,728,302	246,275,432
1924	135,201,833	29.5	1,678,128,003	1,719,965,616	246,275,432	204,437,819
1925	128,491,377	32.3	1,744,120,239	1,610,929,058	204,437,819	337,629,000
Pennsylvania:						
1923	21,352,433	35.1	315,360,775	319,565,854	20,346,095	25,141,016
1924	21,958,405	38.0	349,269,250	347,738,097	25,141,016	26,672,169
1925	26,118,245	40.0	426,470,248	420,814,417	26,672,169	32,328,000
Indiana-Illinois:						
1923	51,275,550	47.1	1,015,323,937	1,006,211,117	103,810,391	112,923,211
1924	56,399,038	49.6	1,176,187,866	1,129,962,511	112,923,211	159,148,566
1925	67,158,653	51.8	1,461,600,421	1,445,330,987	159,148,566	175,418,000
United States:						
1923	**581,237,816**	**39.9**	**7,555,945,143**	**7,364,838,354**	**883,792,861**	**1,074,899,650**
1924	**643,719,349**	**33.1**	**8,850,680,220**	**8,841,816,000**	**1,176,668,157**	**1,294,472,377**
1925	**740,063,754**	**34.9**	**10,849,127,907**	**10,495,272,184**	**1,294,472,377**	**1,648,328,000**

*Domestic production only—does not include imports.
†Domestic demand plus exports minus imports. This applies to areas on seaboard only. "Inland" areas are not affected by imports and exports.
Please note: California stocks for 1923 have not been revised; stocks for 1924 and 1925 are the latest revised figures of the Bureau of Mines. The foregoing also applies to stocks for the United States.

TABLE 3—Fuel Oil Production, Shipments and Stocks for 1923, 1924 and 1925, With Crude Run to Stills and Percentage of Fuel Oil Recovered

AREA:	Crude Run to Stills Barrels	Fuel Oil Recovered Per Cent	*Product'n Gallons	†Shipments Gallons	Stock January 1	Stock December 31
Kansas-Oklahoma:						
1923	70,288,792	42.8	1,264,672,386	1,293,594,230	110,140,775	81,218,931
1924	79,700,776	40.3	1,347,974,587	1,296,742,878	81,218,931	132,450,640
1925	97,611,730	38.0	1,559,373,204	1,527,824,844	132,450,640	163,999,000
Texas, North and Central:						
1923	22,011,969	50.6	467,971,405	481,266,137	46,394,477	30,099,745
1924	30,992,435	48.5	631,306,173	601,421,529	33,099,745	62,984,389
1925	35,956,260	48.5	731,779,972	745,876,361	62,984,389	48,888,000
Arkansas-N. Louisiana:						
1923	8,734,615	57.8	211,964,434	217,690,217	11,150,461	5,424,678
1924	12,662,774	69.0	366,354,017	356,056,525	5,424,678	15,722,170
1925	16,239,038	69.6	474,791,513	455,776,683	15,722,170	34,737,000
Total, Mid-Continent:						
1923	**101,035,376**	**45.8**	**1,944,608,225**	**1,992,550,584**	**167,685,713**	**119,743,354**
1924	**123,355,985**	**45.3**	**2,345,634,777**	**2,254,220,932**	**119,743,354**	**211,157,199**
1925	**149,807,028**	**44.0**	**2,765,944,689**	**2,729,477,888**	**211,157,199**	**247,624,000**
Texas, Gulf Coast:						
1923	81,362,104	48.3	1,649,929,523	1,597,224,229	264,524,910	317,230,204
1924	94,032,884	45.9	1,806,614,915	1,908,702,779	317,230,204	215,142,337
1925	108,325,103	44.9	2,041,603,908	1,964,865,246	215,142,337	291,881,000
Louisiana, Gulf Coast:						
1923	32,071,581	38.4	516,629,066	663,146,851	197,560,781	51,042,996
1924	36,753,880	38.9	601,066,709	540,136,231	51,042,996	111,973,474
1925	50,758,361	51.4	1,094,235,573	1,073,131,047	111,973,474	133,078,000
Total, Gulf Coast:						
1923	**113,433,685**	**45.3**	**2,166,558,589**	**2,260,371,080**	**462,085,691**	**368,273,200**
1924	**130,786,764**	**43.8**	**2,407,681,621**	**2,448,839,010**	**368,273,200**	**327,115,811**
1925	**159,083,464**	**47.0**	**3,135,839,481**	**3,037,996,292**	**327,115,811**	**424,959,000**
East Coast:						
1923	116,759,092	49.2	2,412,659,927	2,408,134,786	259,286,446	263,811,587
1924	135,201,833	50.3	2,856,440,353	2,916,483,036	263,811,587	204,768,904
1925	128,491,377	45.8	2,474,871,602	2,448,975,506	204,768,904	230,665,000
Pennsylvania:						
1923	21,352,433	22.4	201,075,453	189,742,730	25,443,906	36,776,629
1924	21,958,405	20.8	192,289,467	207,249,437	36,776,629	21,816,659
1925	26,118,245	23.0	241,947,533	239,168,192	21,816,659	24,596,000
Indiana-Illinois:						
1923	51,275,550	30.9	665,785,166	647,672,610	26,391,368	44,503,924
1924	56,399,038	31.0	734,150,289	743,237,509	44,503,924	35,416,704
1925	67,158,653	27.6	777,425,759	770,762,463	35,416,704	42,080,000
Rocky Mountain:						
1923	27,175,700	51.2	584,225,282	591,644,480	36,162,234	28,743,036
1924	26,737,336	46.9	526,671,282	534,320,791	28,743,036	21,093,527
1925	26,164,102	42.9	470,760,891	425,159,418	21,093,527	66,695,000
Total, East of California:						
1923	**431,031,836**	**44.1**	**7,974,912,642**	**8,000,116,270**	**977,055,358**	**861,851,730**
1924	**494,439,361**	**43.6**	**9,062,867,789**	**9,103,350,715**	**861,851,730**	**821,368,804**
1925	**555,822,869**	**42.3**	**9,866,789,955**	**9,651,539,750**	**821,368,804**	**1,036,619,000**
California:						
1923	150,205,980	65.0	4,099,279,051	3,773,788,562	327,672,492	653,182,981
1924	149,279,988	70.1	4,397,101,056	4,201,143,903	653,182,981	849,140,134
1925	184,180,885	70.0	5,412,281,614	‡	‡	‡
United States:						
1923	**581,237,816**	**49.5**	**12,074,191,693**	**11,863,884,832**	**1,304,777,850**	**1,515,034,711**
1924	**643,719,349**	**49.8**	**13,459,968,845**	**13,304,494,618**	**1,515,034,711**	**1,670,508,938**
1925	**740,063,754**	**49.1**	**15,279,071,569**	‡	‡	‡

*Domestic production only—does not include imports.
†Domestic demand plus exports minus imports. This applies to areas on the seaboard only. "Inland" areas are not affected by imports and exports.
‡Figures not available.
Please note—California stocks for 1923 and 1924 have not been revised—also stocks of the United States.

In the days when cigarettes were "coffin nails"

Thirty-two years ago the man who smoked a "pack a day" was committing suicide—"antis" had the time of their lives blaming hell and its friends for this great, great evil—but that was a long time ago—and the World War put the final clamp on it.

Jones Sucker Rods have gone along thirty-two years without a single anti raising a whisper—oil men know they're the best rods, because they prove it when they use them—we know it, because from both a laboratory and manufacturing standpoint none can be better—our aim is always to produce the finest sucker rods—always far better—and they are!

If you don't know them—get acquainted with Jones Forged End Rods—the Giant and Perfect—you'll like them.

THE S. M. JONES COMPANY
TOLEDO OHIO
Mid-Continent Office: 602 Wright Bldg., Tulsa, Okla.

JONES
SUCKER RODS

"The Largest Manufacturers of Sucker Rods in the World"

ported. On the other hand we exported almost exactly half as much kerosene as we consumed here at home.

Kerosene Recovery

Pennsylvania, the birthplace of the oil industry, and of the kerosene industry, still recovers the largest percentage of kerosene from the crude run to stills—13.6 per cent in 1925—15.9 per cent in 1924—and 16.9 per cent in 1923.

In checking down the column headed "Kerosene recovered, per cent," in Table 2, it is very significant that with the exception of Kansas, Oklahoma and the East Coast, the percentage recovery of kerosene dropped in 1924—and again in 1925. The price of crude oil, the inherent qualities of different crudes, the advancement made in refining equipment and practice, the prices of refined products, the varying and increasing needs of different industries for different petroleum products are all reflected in the shifting percentages of finished products obtained at different times and in different areas from the barrel of crude oil.

It is interesting to note that the Kansas-Oklahoma area, the Texas Gulf Coast and the East Coast make over 56 per cent of our kerosene, while California and the Indiana-Illinois area each make about 10 per cent.

Stocks of kerosene are relatively small—only about one-sixth as large as of gasoline. And while California produces 10 per cent of the kerosene, she is carrying 25 per cent of the storage. In proportion to her output California is carrying three times as much kerosene as the East Coast. The three Seaboard areas—California Gulf Coast and East Coast are carrying almost 70 per cent of the kerosene in storage.

That the market for kerosene is very definitely known, and that the output is kept in a healthy relation to the market, are clearly indicated by the following balance sheet.

Table 6—Kerosene Balance Sheet for 1925

	Gallons
Stock Janury 1	360,956,345
Production	2,540,333,939
Imports	3,012,723
Total	2,874,303,007
Exports	880,237,898
Domestic demand	1,694,875,109
Stock December 31	299,190,000
Total	2,874,303,007
Total current supply	**2,513,346,662**
Total current demand	**2,575,113,007**
Excess of current demand over current supply	**61,766,345**

Because the larger part of California's crude output is of fuel oil grade—and because about 70 per cent of the California crude run to stills comes out of fuel oil—the Bureau of Mines now includes California refined fuel oil in storage in California with heavy crude oil. And the result is that, today, we do not know definitely how much fuel oil there is in storage in either the United States or California—nor how much crude oil there is in storage in either area. The effect of the reclassification is clearly shown in Table 3 and also in Table 7.

Table 7—Fuel Oil Balance Sheet for 1925

	Gallons
—For the United States—	
Stock January 1	1,670,508,938
Production	15,279,071,569
Imports	509,929,233
Total	17,454,509,740
Exports	1,517,068,668
Domestic demand	*
Stock December 31	*
Total	*
—For East of California—	
Stock Janpary 1	821,368,804
Production	9,866,789,955
Imports	*
Total	*
Exports	*
Domestic demand	*
Stocks December 31	1,036,619,000
Total	*

*Figures not available.

Recovery of Lubs.

From "the average barrel" of crude oil run to stills in 1925, only 4.2 per cent lubricating oil was recovered—4.3 per cent in 1924—and 4.5 per cent in 1923.

With a constantly increasing number of machines and especially automobiles, motor buses and trucks—the small increase in our total output of lubricating oil comes as something of a surprise. Probably the major facts back of this apparently contradictory situation are found in the more efficient design of machines and the more efficient use of lubricants.

Our output of lubricating oil is about half as much as of kerosene—but we carry about the same amount in storage.

Pennsylvania recovers a slighly higher percentage of lubricating oil than of kerosene—and in the percentage recovery of both, easily leads the other refining areas of the United States. It is interesting to note that Pennsylvania gets almost as much kerosene and almost as much lubricting oil, from the crude it runs to stills as it does of fuel oil.

One of the most interesting things in Table 4, is a comparison of the different percentages of lubricating oil—recovered by the different refining areas—and the attempt to visualize the "point of origin" of the different crudes run to stills in the 10 refining areas as well as the inherently different qualities of the crudes run in the different areas.

Disregarding percentage recoveries, over one-half of the lubricating oil of the United States is made on the East Coast and the Texas Gulf Coast.

California and the Kansas-Oklahoma area each make about the same amount of lubricating oil, although California's recovery is only half as much as Kansas-Oklahoma's.

Table 8—Lubricating Oil Balance Sheet for 1925

	Gallons
Stock January 1	269,640,816
Production	1,301,015,962
Imports	1,574,396
Total	1,572,231,174
Exports	407,324,941
Domestic demand	859,703,233
Stock December 31	303,203,000
Total	1,570,231,174
Total current supply	**1,302,500,358**
Total current demand	**1,267,028,174**
Part of current supply used	**97.2%**

Crude Supply and Demand

In 1925, the current supply (production plus imports) of crude oil in the United States was 821,851,000 bbls. The current demand (deliveries to domestic consumers and exports) was 812,641,000 bbls. In other words we "used up" over 98.7 per cent of our current supply.

Table 9—Crude Oil Balance Sheet for 1925 From latest figures of the Bureau of Mines

Stock January 1:	Barrels
East of Cal.—at tank farms	280,807,000
East of Cal.—at refineries	31,183,907
In Cal.—light crude	40,517,740
In Cal.—heavy crude and fuel	55,963,901
Foreign oil not at refineries	734,000
Production— (The Oil and Gas Journal figures)	759,846,578
Imports (crude oil only)	62,005,000
Total	1,231,058,126
Exports (crude oil only)	13,353,000
Deliveries to domestic consumers	799,288,126
Stock December 31:	
East of Cal.—at tank farms	264,724,000
East of Cal.—at refineries	27,157,000
In Cal.—light crude	44,323,000
In Cal.—heavy crude and fuel	81,806,000
Foreign oil not at refineries	407,000
Total	1,231,058,126
Total current supply	**821,851,578**
Total current demand	**812,641,126**
Surplus	**9,210,452**

On January 1 and December 31, 1925, California stocks were as follows:

	Jan. 1 Barrels	Dec. 31 Barrels
Light crude	40,517,740	44,323,000
Heavy crude (and fuel oil	55,963,901	81,806,000
Total	96,481,641	126,129,000
Increase during the year		29,647,359

In arriving at these final figures, as set forth in Table 9, the following explanation is made: Figures for crude production for 1925, are those of The Oil and Gas Journal and represent the total production of crude oil whereas the monthly fiugres of the Bureau of Mines show only the crude removed from leases—and obviously these monthly figures do not represent the total crude production during the month. When the preliminary figures of the Bureau of Mines for 1925 production (755,852,000 bbls.) are finally revised it is probable that they will not differ from The Oil and Gas Journal figures by more than a small fraction of one per cent.

Fuel Oil in California

It is obvious that on December 31, 1925, there was more fuel oil in storage in California than on January 1, 1925. And in using the foreign figures in Table 9, this fact should be kept in mind.

Of the 799,000,000 barrels of crude oil "delivered to domestic consumers" during the year 1925, the refineries ran to stills 740,000,000 bbls. This left 59,000,000 bbls. to be used for all other purposes.

That the United States is now "using up" crude oil at the rate of over 800,000,000 barrels a year may come as something of a surprise—and yet, in 1925, the refineries ran to stills almost 97,000,000 bbls. more crude oil than in 1924.

And if, in 1926, the refineries ran to still only 50,000,000 bbls. more crude than in 1925—and if we "use otherwise" about 50,000,000 barrels of crude (compared with 59,000,000 bbls in 1925)—and if we export 10,000,000 bbls. of crude (compared with over 13,000,000 bbls in 1925), our total crude oil requirements will very obviously be at least 850,000,000 bbls.

Increased refining efficiency will materially reduce the "throughput-recovery requirements for crude oil in 1926 as compared with previous years. The aggregate capacity of cracking stills will be increased in 1925—and more barrels of charging stock will be run to them. Natural gasoline will be a larger factor in 1926 than in 1925.

Our gasoline output increased 1,890,000,000 gallons in 1925. If, in 1926, it increases 1,900,000,000 gallons the year's output will be 12,600,000,000 gallons. And if the average gasoline recovery for the United States is 36.9 per cent (compared with 34.9 in 1925) the refineries will run over 810,000,000 bbls. of crude to stills.

Add to this amount the crude "used otherwise" and the crude exported, and it seems impossible that our crude requirements in 1926 could be less than 850,000,000 bbls.—and they are more likely to be greater.

TABLE 2—Kerosene Production, Shipments and Stocks for 1923, 1924 and 1925, With Crude Run to Stills and Percentage of Kerosene Recovered

AREA:	Crude Run to Stills Barrels	Kerosene Recovered Per Cent	*Product'n Gallons	†Shipments Gallons	Stock January 1	Stock December 31
Kansas-Oklahoma:						
1923	70,288,792	9.5	280,525,957	293,671,661	30,748,052	17,602,348
1924	79,700,776	10.2	341,187,195	326,673,931	17,602,348	32,115,612
1925	97,611,730	9.3	381,771,205	397,896,817	32,115,612	15,990,000
Texas, North and Central:						
1923	22,011,969	11.7	108,373,317	103,480,370	17,446,814	22,339,761
1924	30,992,435	8.1	106,019,510	111,796,162	22,339,761	16,564,109
1925	35,956,260	6.4	99,869,404	99,644,513	16,563,109	16,788,000
Arkansas-N. Louisiana:						
1923	8,734,615	9.2	33,788,716	34,514,168	1,840,468	1,115,016
1924	12,662,774	7.0	36,657,847	36,579,673	1,115,016	1,193,190
1925	16,239,038	4.2	28,209,472	29,141,662	1,193,190	261,000
Total, Mid-Continent:						
1923	**101,035,376**	**10.0**	**422,687,990**	**431,666,199**	**50,035,334**	**41,057,125**
1924	**123,355,985**	**9.3**	**483,864,552**	**475,049,766**	**41,057,125**	**49,871,911**
1925	**149,807,028**	**8.1**	**509,850,081**	**526,682,992**	**49,871,911**	**33,039,000**
Texas, Gulf Coast:						
1923	81,362,104	12.5	427,411,089	429,471,438	37,314,704	35,254,355
1924	94,032,884	11.5	453,013,634	466,171,482	35,254,355	82,096,507
1925	108,325,103	10.0	461,245,604	477,419,111	82,096,507	66,923,000
Louisiana, Gulf Coast:						
1923	32,071,581	17.4	221,274,308	199,756,096	23,228,246	44,746,458
1924	36,753,880	14.5	223,322,438	232,378,475	44,746,458	35,690,421
1925	50,758,361	9.4	201,138,974	224,186,395	35,690,421	12,643,000
Total, Gulf Coast:						
1923	**113,433,685**	**13.4**	**648,685,397**	**629,227,534**	**60,542,950**	**80,000,813**
1924	**130,786,764**	**12.3**	**676,336,072**	**638,549,957**	**80,000,813**	**117,786,928**
1925	**149,807,028**	**8.1**	**509,850,081**	**526,682,992**	**49,871,911**	**33,039,000**
Rocky Mountain:						
1923	27,175,700	11.1	126,980,692	125,968,657	5,629,281	6,651,316
1924	26,737,336	8.8	99,296,031	96,742,357	6,651,316	9,204,990
1925	26,164,102	8.4	92,696,809	88,168,799	9,203,990	13,732,000
California:						
1923	150,205,980	3.4	216,140,319	213,530,883	27,617,967	30,227,403
1924	149,279,988	4.7	298,117,433	284,514,204	50,725,807	64,329,036
1925	184,180,885	3.5	270,854,981	260,614,017	64,329,036	74,570,000
East Coast:						
1923	116,759,092	11.6	566,079,099	577,548,864	84,348,338	72,878,573
1924	135,201,833	10.1	577,193,250	578,983,162	72,878,573	71,088,660
1925	128,491,377	10.6	573,914,914	591,448,574	71,088,660	53,555,000
Pennsylvania:						
1923	21,352,433	16.9	151,462,063	151,627,020	13,246,435	13,081,478
1924	21,958,405	15.9	146,789,721	147,111,721	13,081,478	12,759,478
1925	25,118,245	13.6	143,110,057	146,122,535	12,759,478	9,747,000
Indiana-Illinois:						
1923	51,275,550	10.1	216,899,152	217,230,220	39,630,027	39,298,959
1924	56,399,038	10.1	239,512,505	242,895,122	39,298,959	35,916,342
1925	67,158,653	9.1	267,522,519	257,457,861	35,916,342	35,981,000
United States:						
1923	**581,237,816**	**9.5**	**2,348,934,712**	**2,346,789,377**	**281,050,332**	**283,195,667**
1924	**643,719,349**	**9.3**	**2,521,108,564**	**2,463,846,290**	**303,694,071**	**360,956,345**
1925	**740,003,754**	**8.0**	**2,510,033,939**	**2,572,100,284**	**360,956,345**	**299,190,000**

See footnotes under Table 1—Gasoline.

TABLE 4—Lubricating Oil Production, Shipments and Stocks for 1923, 1924 and 1925 With Crude Run to Stills and Percentage of Lubricating Oil Recovered

AREA:	Crude run to Stills Barrels	Lub. oil Recovered Per Cent	*Product'n Gallons	†Shipments Gallons	Stock January 1	Stock December 31
Kansas-Oklahoma:						
1923	70,288,792	2.8	82,141,452	88,357,075	16,031,098	9,815,475
1924	79,700,776	2.8	93,223,289	86,508,061	9,815,475	16,530,703
1925	97,611,730	2.6	105,739,508	103,625,211	16,530,703	18,645,000
Texas, North and Central:						
1923	22,011,969	.4	3,721,066	4,088,105	465,530	98,491
1924	30,992,435	1.3	16,995,668	16,278,730	98,491	815,429
1925	35,956,260	1.4	21,540,899	20,694,328	815,429	1,662,000
Arkansas-N. Louisiana:						
1923	8,734,615	.2	597,032	394,928	16,800	218,904
1924	12,662,774	.7	3,424,662	2,964,956	218,904	678,510
1925	16,239,038	.4	2,468,648	3,140,158	678,510	7,000
Total, Mid-Continent:						
1923	**101,035,376**	**2.0**	**86,459,550**	**92,840,108**	**16,513,428**	**10,132,870**
1924	**123,355,985**	**2.2**	**113,643,519**	**105,751,747**	**10,132,870**	**18,024,642**
1925	**149,807,028**	**2.1**	**129,749,055**	**127,459,697**	**18,024,642**	**20,314,000**
Texas, Gulf Coast:						
1923	81,362,104	8.2	282,230,290	277,889,151	46,457,089	50,798,228
1924	94,032,884	6.7	262,964,567	256,772,343	50,798,228	56,990,452
1924	108,325,103	6.7	302,527,035	302,904,487	56,990,452	56,613,000
Louisiana, Gulf Coast:						
1923	32,071,581	1.9	25,080,579	24,266,036	2,466,366	3,280,909
1924	36,753,880	1.9	28,561,897	25,769,507	3,280,909	6,073,299
1925	50,758,361	1.5	30,831,649	32,393,948	6,073,299	4,511,000
Total, Gulf Coast:						
1923	**113,433,685**	**6.5**	**307,310,869**	**302,155,187**	**48,923,455**	**54,079,137**
1924	**130,786,764**	**5.3**	**291,526,464**	**282,541,850**	**54,079,137**	**63,063,751**
1925	**159,083,464**	**5.0**	**333,358,684**	**335,298,435**	**63,063,751**	**61,124,000**
Rocky Mountain:						
1923	27,175,700	1.6	19,173,283	17,107,895	-3,708,851	5,774,239
1924	26,737,336	1.8	19,729,176	19,943,542	5,774,239	5,559,873
1925	26,164,102	2.2	24,650,436	22,891,309	5,559,873	7,319,000
California:						
1923	150,205,980	1.5	96,845,612	95,991,924	14,140,437	14,994,125
1924	149,279,988	1.7	106,618,260	103,646,854	30,006,974	32,978,380
1925	184,180,885	1.3	103,146,588	101,272,968	32,978,380	34,852,000
East Coast:						
1923	116,759,092	6.7	313,978,717	306,216,960	92,308,579	100,070,336
1924	135,201,833	6.0	338,685,785	348,428,258	100,070,336	90,327,863
1925	128,491,377	7.1	385,937,207	363,427,076	90,327,863	112,838,000
Pennsylvania:						
1923	21,352,433	18.7	167,511,783	173,724,620	36,798,878	30,586,041
1924	21,958,405	19.4	179,149,228	175,496,664	30,586,041	34,238,605
1925	25,118,245	18.0	189,466,580	188,272,185	34,238,605	35,433,000
Indiana-Illinois:						
1923	51,275,550	4.9	106,088,408	102,281,245	23,341,159	27,148,322
1924	56,399,038	4.4	105,574,245	107,274,865	27,148,322	25,447,702
1925	67,158,653	4.8	134,707,412	126,832,114	25,447,702	33,323,000
United States:						
1923	**581,237,816**	**4.5**	**1,097,368,222**	**1,090,317,039**	**235,734,787**	**242,785,070**
1924	**643,719,349**	**4.3**	**1,154,926,677**	**1,143,083,780**	**257,797,919**	**269,640,816**
1925	**740,003,754**	**4.2**	**1,301,015,962**	**1,265,453,778**	**269,640,816**	**305,203,000**

See footnotes under Table 1—Gasoline.

BUDD-MICHELIN Dual Wheels

for swift, sure, economical deliveries

PUT your trucks on a cushion of air, and you increase their speed and lengthen their lives. One truck and one driver can cover more distance in a day—make more calls—and both truck and driver will come back feeling better.

That's economy and that's service and that's good sense.

Budd-Michelin Dual Wheels make it possible for trucks of any reasonable size, and loads of any reasonable weight, to ride on air.

The heavy bus industry—where gigantic buses travel at express-train speed and are almost always overloaded—has shown the way. They average from 15,000 to 20,000 miles from a set of regular size pneumatics on Budd-Michelin Dual Wheels.

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Truck manufacturers will supply new jobs on Duals and pneumatics—and your present trucks can be converted. Write us for the experience of others.

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WHEEL COMPANY
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The Budd-Michelin equipment—two Budd-Michelin single wheels in front, two Budd-Michelin Dual Wheels in the rear (pairs of single wheels acting together as units). All wheels completely interchangeable either as units or as halves of Duals. One spare.

Few Long Pipe Lines Built in 1925

Two Lines From El Dorado, Ark district to the Mississippi River and Long Louisiana Gas Lines Were the Features of the Year's Work

Pipe line building in 1925 was made up mostly of extensions into pools near lines already laid, and the construction of natural gas lines.

The greatest field for pipe line building last year was in Arkansas and Louisiana. The Standard Pipe Line Co. laid a 95-mile 10-inch line from the Smackover field to the Mississippi River, commencing operations in the first half of the year. Later the Crusader Pipe Line Co. Built a 10-inch line from the Norphlet, Ark. Field to the Mississippi River, 157½ miles in length. The tremendous new production of the Smackover Field made it necessary for pipe line companies already established there to build extensions and gathering lines, which, taken altogether, made up a very respectable year's work. The big gas fields of Louisiana were opened to commerce by means of pipe lines, the longest of which was the 215-mile line of the Magnolia Gas Co.

Year's Work in Oklahoma

Pipe line building in Oklahoma and Kansas during 1925 was confined to a gradual expansion of lateral lines, and loops. There were no large projects undertaken and the introduction of new fields was the onl yreason for the pipe lines covering additional territory.

When the deep sand in the Garber Field in Garfield County was at its peak, the pipe line facilities were completely swamped and were unable to handle a large amount of the oil. The Marland Oil Co. extended its pipe line system from the Tonkawa Field to Garber, and the Ozark Pipe Line Co. (Roxana) found the production from the Roxana Petroleum Corp's. Schroeder lease was twice what its lines could accept. In immediate need of pipe line capacity, the Roxana Corp. leased from the Bolene Refining Co. its pipe line system and this eliminated the necessity for extending the Ozark lines, and at the same time provided an outlet for Roxana's flush production at Garber. Every company which had deep sand production at Garber was affiliated with pipe line systems, excepting the Healdton Oil & Gas Co and the deep sand production of that concern was limited.

The flash caused by the Braman Townsite Pool in Kay County was handled by the extension of the Prairie pipe line system from the North Braman Pool and by lateral lines laid by the Marland Company from the same territory. The glory of this field was short lived and presented no problem to pipe line capacity.

The Thomas Pool northwest of Tonkawa was only six miles from a network of gathering lines, and the Sinclair Gulf, and the Marland companies promptly made preparations to handle the oil at Thomas.

The Cosden Pipe Line Co. built 18 miles of line from its Shamrock station in the Cushing district to Davenport, and is reported to be paying a premium of 35 cents for the high gravity crude produced there. This was probably the longest line built in Oklahoma last year.

In Seminole County two wildcat wells found production in small quantities, and may be the forerunner of good pools. Both of these wells are almost on the main line of two pipe line systems and required short lateral lines to reach them.

The Oklahoma Pipe Line Co. evidently has faith in the future of the Pontotoc County operations, as for a very small quantity of production (approximately 80 bbls.) this concern built lines from Francis to the two wells completed by Jack Lloyd and others east of Ada. This line was built a distance of 12 miles.

A pipe line to the Yeager Field was laid by the Prairie system, and also by Sinclair when the Dixie Oil Co. opened that field. Both of these lines were built a distance of 9 miles.

Southern Oklahoma did very little during the year and caused no pipe line extensions.

Extensions in Kansas

In Kansas the spread of the Golden Lane caused several miles to be added to the pipe line system serving that region. The growth of the fields comprising the lane is so slow, that it is difficult to term the operation an extension, as many times lines are built from one lease to another. In this section of Greenwood County, the Empire has the most production, and possibly runs the most oil. The Empire lines have reached up into the Lyon County extension of the Lane.

Sinclair Pipe Line Co. built a 4-inch line from the El Dorado Field to the Sinclair Oil & Gas Co's. Browning properties in Greenwood County. The new line will improve the facilities of the crowded lines in central Greenwood County.

From the Rainbow Bend a line was laid by the Oklahoma Pipe Line Co. to the Oxford Pool opened by T. B. Slick. This line ran 9 miles west from the Oklahoma main line in this section.

California's New Lines

A check of the new pipe lines laid in California during 1925 does not show any unusual amount of work, if the Pan American line from Taft to Los Angeles is removed from consideration. Although the finishing touches were put on this line early in 1925, it was really laid in 1924 and for this reason it is just casually mentioned in summing up operations of the past year. Most of the new work in 1925 resulted from the development of Inglewood early in the year, this new production forcing companies operating in the area to lay new lines. This was, of course, due to the fact that there were no lines serving the district previously. The Pan American's 10-inch line from Taft to its Watson refinery, near Los Angeles harbor passed within 10 miles of the Inglewood Field and, while it was thought that field connections would be made direct to this line, the company laid a parallel 8-inch from Inglewood to Watson instead. The Pan American company also laid a 4-inch gasoline line from its Watson refinery to the company's distributing station in Los Angeles, the length being about 18 miles. The Standard connected up the Inglewood Field with its El Segundo plant by completing a 6-inch and an 8-inch line to handle crude oil, while gas production was taken care of with a string of 6-inch. All three lines averaged about 10 miles each.

The Associated's new connections necessary to handle Inglewood crude consisted of one 6-inch line from this field to its tank farm at Watson, a distance of 15 miles. This completed the new network of lines from Inglewood, as none of the other operators had sufficient output to warrant the expenditure required to lay new lines. The California Petroleum Co.'s pipe line work during the year consisted of a new 6-inch from Watson to Los Angeles harbor, a distance of 4 miles. This gives the company three lines over this route, two 6-inch, one 8-inch and one 10-inch. The Richfield Oil Co. did not undertake any major work, although several small connecting lines were laid during the period in question. The company did, however, lay a 4-inch gasoline line from its Rioco refinery, near Long Beach, to its distributing station in Los Angeles, a distance of 16 miles.

In the Midway-Sunset Field the Pacific Oil Co. was obliged to augment its pipe line facilities in order to handle increased production due to development of the deep sand in Section 19-31-24 and Section 29-31-24. This additional drilling was made necessary by the completion of several good wells in Section 20-31-24 by the Federal Drilling Co., the Pacific being obliged to drill offsets. The new line laid, however, was only 5 miles in length and was more of a gathering line than an addition to its pipe line facilities. The Long Beach extension has resulted in the laying of a network of new lines but they were also gathering lines connecting up new wells with pipe line facilities of the various marketing companies. Several small natural gas lines were also laid to the natural gas gasoline plants operating in the vicinity but the average did not run over 2 miles each.

The longest natural gas line laid during the year was that of the Midway Gas and affiliated companies, running from the Ventura Avenue Field to Los Angeles. Gas received into this line was, of course, dry, it having been previously treated by the Pacific Gasoline Co. The Associated, by the way, laid a short line from the Ventura Avenue Field to tidewater in 1925 and is reported negotiating at present for rights of way to put in another. This would seem to indicate that the company anticipates increased production from this field. It may be possible of course that the company is merely making preparations to take care of any eventuality and might hold up construction work for several months. The company will, however, be obliged to augment its present facilities before the close of 1926 as increased production is expected before the expiration of this period.

Pipe Lines in 1925

But little work was completed in 1925 in the Rocky Mountain area compared to previous years in the laying of pipe lines. Several old lines were relaid as the production proved too large for the first installation. The largest single construction during the year was that of the New York Oil Co. on its new 12-inch line from Sand Draw, Wyoming, to a connection with the line at Poison Spider, in the same State, where it feeds to Casper. This line is 75 miles long and is a welded-joint line.

The Illinois Pipe Line Co. relaid much of its gathering system in the Sunburst Field and also laid a new line of 6-inch screw pipe, 13 miles long, at Artesia, New Mexico, to carry oil to the railroad from the field.

The Midwest Refining Co. laid a short line at Lake Basin, Montana, to carry the stored oil there to the railroad. This is a 3-inch line, 6 miles long.

The New York Oil Co. extended its distributing system by laying a 10-inch welded line from Casper to Glenrock, a distance of 30 miles and is now supplying the town of Glenrock and the Continental refinery there.

The Union Oil Co. of California laid two short lines in the Fort Collins, Colorado, Field to the railroad to carry crude from the wells to loading racks.

The Producers & Refiners laid a 10-mile, 4-inch line from Simpson Ridge, Wyoming, to Hanna to carry the Simpson Ridge to the loading rack on the railroad.

The Hope Engineering Co. laid a 17-mile 5⅝-inch line from the Golden Eagle Dome in the Big Horn Basin, Wyoming, to the Little Grass Creek Dome, to carry the gas from the latter to Thermopolis. This line was laid to the account of the Thermopolis Gas Co.

A short gas line was laid in the Fort Collins, Colo., Field to carry gas to the city of Fort Collins.

Little Work in North Texas

There was not one major pipe line project started in the North Central Texas territory during the year 1925. Considerable work that was planned and started in 1925 was completed but nothing of importance otherwise can be recorded for the year.

(Continued on Page 156-H)

RECEIPTS AT ATLANTIC COAST PORTS DURING THE MONTH OF JANUARY

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Feb. 15.—Estimated receipts of crude and refined oil at Atlantic Coast ports for the month of January, 1926, were 13,448,000 bbls., a daily average of 434,000 bbls., compared with 14,138,000 bbls., a daily average of 457,000 bbls., in December, 1925, and 16,148,000 bbls., or 520,000 bbls. daily, in January, 1925.

Receipts from the Gulf Coast in January are estimated at 8,621,000 bbls., a daily average of 279,000 bbls., compared with 9,202,000 bbls., or 298,000 bbls. a day, in the preceding month, and 9,657,000 bbls., a daily average of 311,000 bbls., in January, 1925.

Receipts from California totaled 1,855,000 bbls. in January, 1926, a daily average of 59,000 bbls., against 1,739,000 bbls., or 56,000 bbls. daily, in December, and 2,364,000 bbls, or 77,000 bbls. daily, in January, 1925.

Imports for January, 1926, totaled 2,972,000 bbls., a daily average of 96,000 bbls. This compares with 3,197,000 bbls., or 103,000 bbls. daily, in December, 1925, and 4,127,000 bbls, a daily average of 133,000 bbls., in January, 1925.

From Principal Sources

The following table shows total receipts from the principal sources in January, 1926, December, 1925, and January, 1925, (in bbls.):

	Jan., 1926	Dec., 1925	Jan., 1925
Baton Rouge and New Orleans	1,880,000	2,710,000	3,017,000
Port Arthur, Sabine and Beaumont	3,833,000	3,759,000	3,777,000
Texas City, Houston, Baytown, Galveston	2,908,000	2,733,000	2,862,000
Total Gulf Coast	8,621,000	9,202,000	9,657,000
Pacific Coast	1,855,000	1,739,000	2,364,000
Imports	2,972,000	3,197,000	4,127,000
Total	13,448,000	14,138,000	16,148,000

The daily average figures, in bbls., follow:

	Jan., 1926	Dec., 1925	Jan., 1925
Baton Rouge and New Orleans	60,000	87,000	97,000
Port Arthur, Sabine and Beaumont	124,000	122,000	122,000
Texas City, Houston and Galveston	95,000	89,000	92,000
Total Gulf Coast	279,000	298,000	311,000
Pacific Coast	59,000	56,000	77,000
Imports	96,000	103,000	133,000
Total	434,000	457,000	520,000

(Continued on Page 156-H)

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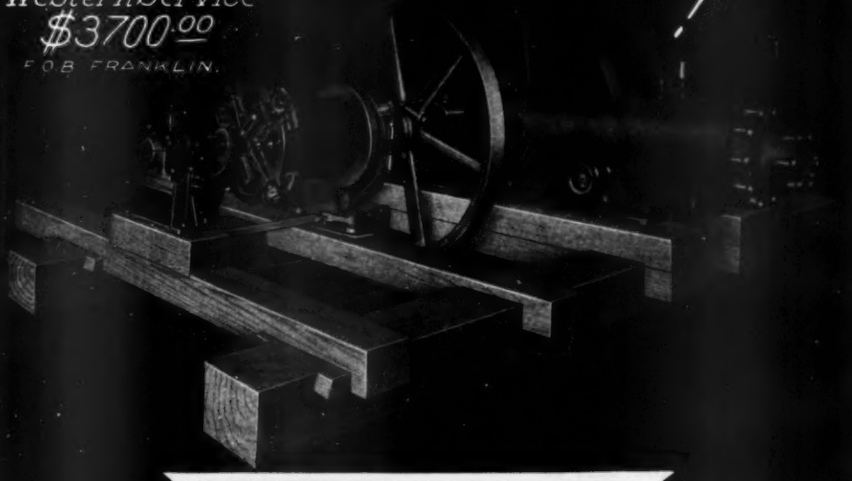

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EAST CENTRAL TEXAS PRODUCED 42,519,917 BBLS.

(Continued from Page 110)

and the fact that it was producing only 13,911 bbls. as an average for December, 1925, very plainly indicates that Wortham will never reach even half the production it was expected to supply. It will be doing well to produce 4,000,000 bbls. this year.

Rush of the Wildcatters

Following the development of Powell came the rush to buy acreage east of the city of Corsicana in Navarro County, in the Bazette area. Every company operating in the East Texas territory paid high prices for acreage and at one time so great was the faith that another big field would be opened by one of the two wells drilling in that territory by the Atlantic Oil Producing Co., Bob Penn and others on the one hand and the Humphreys Boyd Oil Co. on the other that the services of teamsters and motor truck owners was pre-empted subject to call. Every arrangement was made for a quick rush into the field and another Wortham development would have followed the completion of a good well. But the Atlantic-Penn well was a salt water hole with a showing of gas and the Humphreys-Boyd test was altogether a failure and Bazette was a burst bubble. Other dry hole tests followed but they attracted only minor attention.

The play for the Edwards lime in Falls and Milam Counties resulted only in dry holes drilled to great depths at large expense. Not until these tests had been made was the trade convinced that the short-lived gusher drilled a few years ago by the Humphreys Oil Co. at Kosse was not a freak. It was an Edwards lime well, and the opinion held that somewhere along the Balcones fault a big pool might be found. There is still much room for operations between the Luling Field in Caldwell County and Milam County, which is being tested to some extent at this time.

The only new territory opened in the course of the year was a small development near Richland discovered by Barclay and others. It proved spotted and added little to the production of the territory when the dry hole investments are considered.

There is little to look forward to in the East Central Texas Field. It has in the course of the past four years received a very general testing out during which a large number of dry holes were drilled. The Mexia and Powell fields have held up very well as producing factors, much better than Wortham and these three were the really important pools discovered and developed.

Following is the summary of completed work for the territory for 1925:

EAST CENTRAL TEXAS
Summary of Wells Completed in 1925

County—	Comp.	Prod.	Dry	Gas
Freestone - Limestone	403	359,829	73	12
Navarro	213	8,896	73	7
Falls	4	.....	4	..
Bowie	5	.....	5	..
Delta	1	.....	1	..
Franklin	1	.....	1	..
Henderson	4	.....	4	..
Hopkins	4	.....	4	..
Hunt	5	.....	5	..
Kaufman	5	.....	5	..
Milam	9	.....	9	..
Raines	2	.....	2	..
Red River	6	.....	6	..
Robertson	2	.....	2	..
Anderson	3	.....	3	..
Case	2	.....	2	..
Hill	1	.....	1	..
Titus	1	.....	1	..
VanZandt	2	.....	2	..
Total, 1925	683	368,725	208	19
Total, 1924	444	275,545	158	5
Difference	239	93,180	50	14

Completions By Months

Month—	Comp.	Prod.	Dry	Gas
January	136	279,542	19	1
February	168	58,503	41	2
March	104	17,309	26	2
April	57	4,529	22	5
May	30	1,479	10	1
June	41	3,177	9	4
July	32	1,981	10	1
August	38	718	17	0
September	22	731	10	0
October	16	354	9	0
November	29	112	25	1
December	16	290	10	2
Total, 1925	683	368,725	208	19
Total, 1924	444	275,545	158	5
Difference	239	93,180	50	14
Total, 1925	683	368,725	208	19
Total, 1924	444	275,545	158	5
Total, 1923	771	1,619,527	133	2
Total, 1922	864	750,770	300	16

PRODUCTION INCREASE IN GULF COAST

(Continued from Page 114)

July	1	7	..	
August	2	..	2	
September	3	25	2	
October	2	35	1	
November	1	5	..	
December	2	15	1	
Total, 1925	34	1,607	12	
Total, 1924	36	419	15	

Sour Lake

January	7	225	1
February	4	350	..
March	7	367	..
April	6	149	2
May	5	240	1
June	4	85	1
July	1	450	..
August	2	..	2
September	4	100	1
October	5	555	..
November	5	410	1
December	2	15	1
Total, 1925	52	2,946	11
Total, 1924	52	2,620	24

South Liberty

	Comp.	Prod.	Dry
January	1	350	..
February	3	2,700	..
March	20	33,290	3
April	27	21,275	6
May	64	26,175	12
June	18	6,585	2
July	21	14,350	3
August	10	945	6
September	8	3,950	3
October	2	..	2
November	2	50	1
December	..	..	..
Total, 1925	176	109,670	37

Vinton

	Comp.	Prod.	Dry
January	6	200	2
February	4	..	4
March	2	1,500	3
April	4	110	2
May	3	3,700	1
June	5	2,110	1
July	5	4,605	..
August	5	2,510	..
September	5	1,140	..
October	3	315	5
November	9	700	3
December	3	435	..
Total, 1925	63	17,325	21
Total, 1924	69	7,705	18

West Columbia

January	5	45	3	
February	2	10	1	
March	4	10	3	
April	5	135	2	
May	2	25	..	
June	..	..	..	
July	1	..	1	
August	3	260	..	
September	1	..	1	
November	1	..	1	
December	2	75	1	
Total, 1925	26	560	13	
Total, 1924	28	11,045	7	

Miscellaneous

	Comp.	Prod.	Dry	Gas
January	8	10	7	..
February	4	10	2	1
March	6	50	5	..
April	8	..	8	..
May	7	20	6	..
June	13	100	9	2
July	16	..	15	1
August	13	..	10	3
September	16	100	15	..
October	13	..	12	1
November	12	..	12	..
December	16	..	15	1
Total, 1925	132	290	123	9

Review of Production

A review of the gross production table will show that were it not for the new South Liberty Pool and Boling, the total for the year 1925 would have been approximately the same as during 1924. As it is there is an increase of 4,685,485 bbls. in the gross output.

The Texas pools produced 31,162,776 bbls. of the gross and those in south Louisiana 3,688,799 bbls.

May was the banner month with an estimated total of 3,436,071 bbls. and January the low month with 2,383,646 bbls.

The gross for each pool by month is as follows::

GROSS PRODUCTION BY MONTH
Gulf Coast by Pools and Months

Boling

	Gross Bbls.
December	39,000

Batson

	Gross Bbls.
January	49,476
February	45,360
March	46,080
April	44,280
May	45,942
June	44,280
July	43,493
August	59,104
September	43,830
October	60,915
November	40,350
December	39,587
Total, 1925	563,197

Blue Ridge

	Gross Bbls.
January	20,553
February	18,345
March	28,241
April	36,740
May	52,620
June	44,010
July	32,023

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The Burning Question

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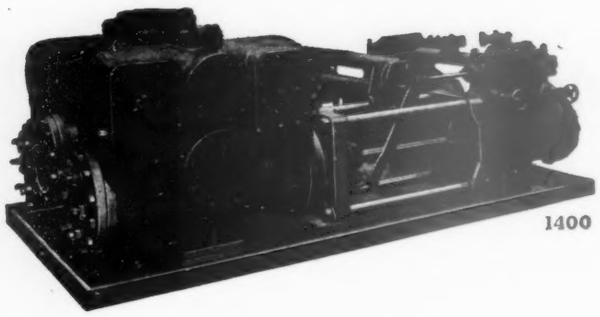

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Aside from the piston rods and pistons, the only other parts of the fluid end are the valves and covers — nothing for expansion and contraction to loosen — no guards, no stems, no springs, no separate seats and no valve plates.

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PUMP & MACHINE CO.
OIL CITY, PA.

New York Philadelphia Pittsburgh
Cleveland Denver Houston Tulsa

August	22,847
September	19,050
October	18,448
November	18,420
December	27,460
Total, 1925	338,757

Big Creek

	Gross Bbls.
January	13,299
February	15,148
March	16,709
April	20,910
May	53,040
June	17,130
July	38,192
August	32,767
September	30,480
October	35,371
November	36,300
December	31,000
Total, 1925	340,346

Barber Hill

	Gross Bbls.
January	4,154
February	3,332
March	3,131
April	3,720
May	3,270
June	3,300
July	3,162
August	2,945
September	2,760
October	3,069
November	2,550
December	2,945
Total, 1925	38,338

Dayton

	Gross Bbls.
January	2,380
February	2,276
March	1,271
April	1,170
May	1,426
June	1,350
July	1,462
August	1,457
September	1,530
October	1,488
November	1,530
December	1,185
Total, 1925	18,525

Damon Mound

	Gross Bbls.
January	37,262
February	33,235
March	32,510
April	33,770
May	35,030
June	35,100
July	37,045
August	35,650
September	34,050
October	34,347
November	32,520
December	31,000
Total, 1925	411,519

Edgerly

	Gross Bbls.
January	18,250
February	15,890
March	17,577
April	21,420
May	20,643
June	15,920
July	15,965
August	15,655
September	16,980
October	16,778
November	15,300
December	13,423
Total, 1925	203,801

Goose Creek

	Gross Bbls.
January	281,309
February	247,856
March	271,746
April	270,570
May	293,322
June	341,180
July	246,554
August	301,350
September	288,650
October	323,646
November	316,740
December	289,887
Total, 1925	3,472,810

Humble

	Gross Bbls.
January	156,302
February	149,250
March	149,451
April	148,070
May	148,079
June	151,530
July	139,325
August	134,602
September	131,280
October	134,364
November	135,990
December	151,497
Total, 1925	1,729,740

Hull

	Gross Bbls.
January	475,509
February	432,180
March	671,189
April	849,870
May	787,369
June	637,860
July	612,002
August	586,427
September	646,860
October	566,401
November	531,300
December	499,720
Total, 1925	7,296,687

High Island

	Gross Bbls.
May	17,577
June	22,530
July	22,010
August	16,585
September	14,040
October	25,130
November	29,047
December	16,802
Total, 1925	163,721

Jennings

	Gross Bbls.
January	23,229
February	18,924
March	31,341
April	31,890
May	44,441
June	18,750
July	35,823
August	24,862
September	33,280
October	30,008
November	30,010
December	42,222
Total, 1925	343,780

Lockport

	Gross Bbls.
January	14,911
February	16,632
March	12,524
April	7,170
May	6,014
June	11,280
July	4,836
August	3,875
September	54,750
October	122,481
November	135,640
December	115,010
Total, 1925	505,123

Markham

	Gross Bbls.
January	3,069
February	2,856
March	3,162
April	3,870
May	2,635
June	2,400
July	2,488
August	2,425
September	2,350
October	2,325
November	2,310
December	2,387
Total, 1925	32,277

Orange

	Gross Bbls.
January	344,720
February	285,236
March	322,927
April	393,720
May	415,989
June	399,120
July	504,928
August	493,737
September	481,110
October	328,860
November	473,640
December	498,170
Total, 1925	4,942,157

Pierce Junction

	Gross Bbls.
January	53,560
February	31,948
March	26,200
April	19,170
May	17,530
June	16,830
July	15,717
August	12,772
September	20,310
October	21,797
November	20,340
December	71,641
Total, 1925	327,815

Piedras Pintas

	Gross Bbls.
December	10,500

Spindletop

	Gross Bbls.
January	35,164
February	33,890
March	34,565
April	36,900
May	37,975
June	34,500
July	34,956
August	33,976
September	32,280
October	35,402
November	36,030
December	35,185
Total, 1925	420,823

Saratoga

	Gross Bbls.
January	45,694
February	42,152
March	48,205
April	49,050
May	51,708
June	50,550
July	52,106
August	45,694
September	47,550
October	47,864
November	48,010
December	47,244
Total, 1925	575,827

Sour Lake

	Gross Bbls.
January	115,599
February	121,076
March	127,100
April	129,030
May	131,657
June	131,370
July	128,960
August	132,649
September	127,860
October	131,564
November	122,560
December	128,402
Total, 1925	1,527,827

South Liberty

	Gross Bbls.
January	11,470
February	30,100
March	322,400
April	423,380
May	671,181
June	606,780
July	619,504
August	494,419
September	428,460
October	422,685
November	327,300
December	316,324
Total, 1925	4,674,003

Vinton

	Gross Bbls.
January	182,962
February	156,872
March	177,320
April	176,010
May	212,558
June	361,960

END YOUR CLAMP TROUBLES!

Patent No. 1536278, May 5th, 1925

"The Curve on the Clamp Fits the Crown on the Pulley"

Six Reasons Why You Should Use
Federal Belt Clamps

1. The old style belt clamp as shown in lower right hand corner of illustration, with straight bars and sharp edges, cuts the belt on the pulley side every time it passes over the pulley. These cuts permit air to enter the plys of the belt and each additional blow as the belt passes over the pulley forces air farther into the plys thus forming air pockets and causing bootlegging.
2. Every FEDERAL BELT CLAMP is made with a curve on the face to correspond with the crown on the belt pulley, thereby preventing side slip on pulley and keeping the belts from sliding on shoes of clutch.
3. The "liner" inserted between clamps as shown in illustration holds the belt firmly against the curve on the outside clamp and forms an uninterrupted curved surface fitting smoothly against pulley.
4. FEDERAL BELT CLAMPS are made of pressed steel, drilled and fitted with 5/8-inch HEAT TREATED STEEL BOLTS and lock washers.
5. By using FEDERAL BELT CLAMPS you eliminate all your clamp troubles, prevent bootlegging in your belts, increase their efficiency and prolong their usefulness.
6. There are imitations and infringements on the market—as a protection to our customers, we warn you that unless it is a FEDERAL BELT CLAMP, it is an inferior product.

TEXAS, OKLAHOMA and KANSAS
At all stores of the
Continental Supply Co.
International Supply Co.
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Bovaird Supply Co.
Dunnigan Tool & Supply Company
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Oil Well Supply Co.
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The Republic Supply Co.
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ARKANSAS and LOUISIANA
Continental Supply Co.
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THE FEDERAL SUPPLY COMPANY

Fort Worth, Texas **Manufacturers** **Mexia, Texas**

This is No. 4 of a series on specifications—keep for reference in ordering.

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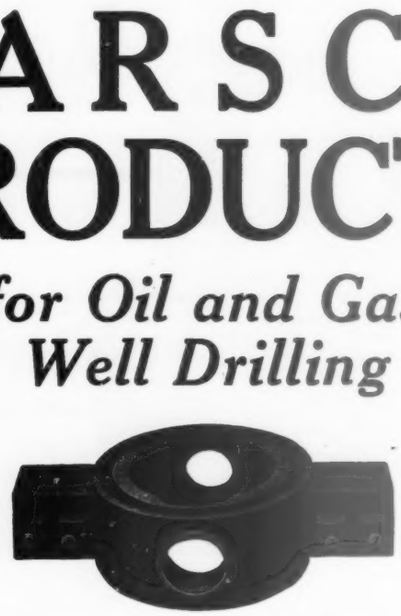
for Oil and Gas Well Drilling



—here's a stronger and more rigid Gas Packing Clamp—

Here's another proof that BARSCO products are built better—*two extra strong bolts* (instead of the usual one) *at either end*—greater rigidity, therefore longer life.

Specifications on Gas Packing Clamps with Gas Outlet

Size, Inches	Size Gas Outlet	Weight, Pounds
6¼x 4½	1½ or 2	120
6⅝x 4½	1½ or 2	130
6⅝x 5 7/16	1½ or 2	120
7⅝x 5⅝	1½ or 2	150
8¼x 5 7/16	1½ or 2	160
8¼x 5 7/16	2½ or 3	155
8¼x 6¼	1½ or 2	160
8¼x 6¼	2½ or 3	180
8¼x 6⅝	1½ or 2	155
8¼x 6⅝	2½ or 3	190
9⅝x 7⅝	1½ or 2	195
9⅝x 7⅝	2½ or 3	240
10 x 6⅝	1½ or 2	230
10 x 6⅝	2½ or 3	290
10 x 8¼	1½ or 2	200
10 x 8¼	2½ or 3	250
11⅝x 9⅝	1½ or 2	245
11⅝x 9⅝	2½ or 3	320
12½x 8¼	1½ or 2	310
12½x 8¼	2½ or 3	390
12½x10	1½ or 2	250
12½x10	2½ or 3	330
13½x12½	1½ or 2	300
13½x12½	2½ or 3	380
15½x12½	1½ or 2	370
15½x12½	2½ or 3	465
15½x13½	1½ or 2	350
15½x13½	2½ or 3	440

BARSCO also builds Gas Packing Clamps —regular pattern, without gas outlets.

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Manufacturer's Representatives

B. & A. Specialty Co., Tulsa, Okla. Robert J. Miller Co., Houston, Tex. Miller Tank & Supply Co., Casper, Wyo.

—Write for Complete Catalog

July	295,988
August	273,885
September	245,400
October	212,164
November	203,730
December	206,738
Total, 1925	2,605,587

West Columbia

	Gross Bbls.
January	387,748
February	259,800
March	387,175
April	430,680
May	372,420
June	348,540
July	356,314
August	353,865
September	336,930
October	325,046
November	310,560
December	314,588
Total, 1925	4,183,636

Welsh-Anse La Bute

	Gross Bbls.
January	2,542
February	2,491
March	2,666
April	2,550
May	2,790
June	2,730
July	2,759
August	2,480
September	2,400
October	2,420
November	2,340
December	2,340
Total, 1925	30,508

***Miscellaneous**

January	6,510
February	5,980
March	6,200
April	4,110
May	3,403
June	3,600
July	3,968
August	3,410
September	5,250
October	4,030
November	3,120
December	4,960
Total, 1925	54,541

*Includes Nacogdoches, Brenham, Big Hill, Stratton Ridge, Hockley, Tex., Iberia and other spots in Coastal Louisiana.

Summary Gross Production Gulf Coast Pools for 1925, Compared With 1924

District—	1925 Bbls.	1924 Bbls.
Boling	39,000	.....
Batson	563,197	536,311
Blue Ridge	338,757	306,318
Big Creek	340,346	186,108
Barber Hill	38,333	76,174
Dayton	18,525	33,538
Damon Mound	411,519	525,091
Edgerly (La.)	203,801	176,165
Goose Creek	3,472,810	4,296,540
Humble	1,729,470	2,197,616
Hull	7,296,687	7,431,641
*High Island	163,721	.....
Jennings (La.)	343,780	240,495
Lockport (La.)	505,123	117,326
Markham	32,277	32,037
Orange	4,942,157	4,250,757
Pierce Junction	327,815	173,644
*Piedras Pintas	10,500	.....
Spindle top	420,823	351,385
Saratoga	575,827	560,881
Sour Lake	1,527,827	1,639,288
South Liberty	4,674,003	.....
Vinton (La.)	2,605,587	2,004,369
Welsh-Anse La Bute	30,508	31,833
West Columbia	4,173,636	4,773,585
Miscellaneous	54,541	174,977
Totals	34,850,575	30,166,090
Increase during 1925	.....	4,683,485

*In miscellaneous in 1924.

Gross Production by Months—1925 Compared With 1924

January	2,383,646	2,773,880
February	2,463,780	2,701,272
March	2,840,499	2,967,630
April	3,176,690	2,424,390
May	3,436,071	2,456,657
June	3,296,620	2,419,800
July	3,315,698	2,522,191
August	3,045,340	2,608,092
September	3,077,339	2,480,880
October	3,210,372	2,671,209
November	2,876,640	2,471,170
December	2,921,880	2,618,819
Totals	34,850,575	30,166,090

Since the Gulf Coast territory embraces both South Texas and South Louisiana, the divisions between the two States is as follows:

State—	Comp.	Prod.	Dry or S.W.
Texas	1,025	343,833	347
Louisiana	102	27,410	47
Total	1,145	371,243	394

Gross Production

Texas	31,161,776
Louisiana	3,688,799
Total	34,850,575

Fields Reveiwed

Wells completed in the Southwest Texas fields number 709 during 1925, a gain of 263 compared with 1924. The new production aggregates 121,322 bbls., or a decrease of 92,138 bbls. The dry holes show an increase of 69.

The opening of the Lockhart, sometimes called the Lytton Springs Field, in Caldwell County in March, is responsible for the increase in the number of completions and dry holes, while the almost complete suspension of drilling in the Luling Field accounts for the large decrease in new output. The cessation of operations in the Luling Field is reflected in the report. Thirty wells were completed there in 1925 with only 6,970 bbls. of new production, while during 1924 the completions totaled 156 with 187,815 bbls. of new output.

The Lockhart Field was something of a disappointment. Production was found in the Marl formation there in March. The activity reached its zenith in August with 16,940 bbls. of new production and since that time the decline has been rapid, notwithstanding efforts to extend the territory. The district followed the example of Thrall, another serpentine formation field. The Lockhart Field is credited with 2,715,566 bbls. gross production between March and December 31, last.

The Luling Field has been a consistent producer, although but a little new work was done there during 1925. The gross for the year is placed at 9,371,922 bbls.

The Jim Hogg County Field was extended about 1 mile south late in 1925 and development work is now being carried on in the new section. The county is credited with 1,661,260 bbls. gross output and 29,010 bbls. new production.

The finding of a market for natural gas in Houston and San Antonio had a stimulating effect on development work in the Laredo districts (Webb County.) Connecting lines are now being laid to the gas districts in the county and a prosperous year is anticipated from the sale of a commodity that previously had no value, because of the lack of lines and a market.

It was the most active year in the history of the southwest counties as far as wildcatting is concerned. Bastrop, Caldwell and Guadalupe Counties have been thoroughly tested out, with indifferent results. Some small production has been found in the Ina section of Medina County. The finding of a deep sand off the Pintas Pidras Pool in Duval County came late in the year and is included in the Gulf Coast column, in order to keep the saline domes segregated from the structure. The gravity, however, is higher than the usual Coastal grade.

SOUTHWEST TEXAS FIELDS

Summary of Completed Work in 1925

District—	Comp.	Prod.	Dry	Gas
Luling	30	6,970	7	..
Laredo	75	3,825	12	25
Somerset	21	379	3	..
Calliham	24	143	5	9
Rock-Minerva	90	1,605	8	..
Jim Hogg Co.	110	29,010	9	12
Lockhart	294	78,970	53	..
Misc.	65	420	43	9
Total	709	121,322	140	55
	446	213,460	71	47
	263	92,138	69	8

SOUTHWEST FIELDS
Completions by Month, 1925

Luling

	Comp.	Prod.	Dry	Gas
January	5	1,850	..	..
February	6	1,500	1	..
March	2	500	..	..
April	3	700	1	..
May	3	300	1	..
June	1	200	..	..
July	2	....	2	..
August	2	....	2	..
September	1	200	..	..
October	1	300	..	..
December	4	1,420	..	..
Total, 1925	30	6,970	7	..

Laredo

	Comp.	Prod.	Dry	Gas
January	2	200	..	..
February	3	100	2	2
March	4	150	1	1
April	8	455	..	3
May	6	290	1	1
June	5	210	1	..
July	8	730	..	3
August	15	490	3	4
September	3	230	..	2
October	5	130	..	3
November	7	40	3	3
December	9	800	1	4
Total, 1925	75	3,825	12	25

Somerset

	Comp.	Prod.	Dry	Gas
March	2	20	..	..
May	4	260	..	..
June	3	11	1	..
July	3	18	1	..
August	2	10	1	..
September	1	8	..	..
November	3	24	..	..
December	3	28	..	..
Total, 1925	21	379	3	..

Rockdale-Minerva

	Comp.	Prod.	Dry	Gas
March	1	20	1	..
May	17	241	..	..
June	14	220	1	..
July	19	395	4	..
August	2	70	..	..
September	7	180	1	..
October	10	164	..	..

November	4	43	..	..
December	16	272	1	..
Total, 1925	90	1,605	8	..

Callilham

	Comp.	Prod.	Dry	Gas
January	2	...	..	2
March	1	10	..	..
April	2	...	..	2
May	7	...	3	4
June	4	58	2	..
July	4	50	..	1
August	4	25	..	..
Total, 1925	24	143	5	9

Jim Hogg County

	Comp.	Prod.	Dry	Gas
January	6	5,050	1	..
February	8	7,200	1	..
March	16	3,725	..	3
April	7	1,200	..	1
May	5	2,430	1	..
June	4	200	1	1
July	12	2,900	2	2
August	6	710	1	..
September	7	985	1	2
October	9	1,045	..	1
November	22	1,990	1	2
December	8	1,575	..	..
Total, 1925	110	29,010	9	12

Lockhart

	Comp.	Prod.	Dry	Gas
*March	1	175	..	..
April	11	8,670	2	..
May	43	16,325	10	..
June	37	10,000	8	..
July	56	8,205	11	..
August	58	16,940	8	..
September	36	8,300	6	..
October	24	6,750	..	..
November	16	2,150	3	..
December	12	1,455	5	..
Total, 1925	294	78,970	53	..

*Field opened in March.

SOUTHWEST TEXAS FIELDS
Gross Production by Months

Luling

January	952,320
February	794,116
March	908,300
April	882,105
May	882,000
June	792,270
July	712,690
August	721,656
September	677,340
October	712,690
November	666,750
December	669,755
Total, 1925	9,371,992

Laredo

January	129,766
February	75,948
March	127,286
April	124,050
May	131,595
June	136,290
July	145,390
August	134,657
September	121,230
October	118,141
November	110,700
December	109,678
Total, 1925	1,464,731

Somerset

January	79,112
February	78,234
March	80,197
April	78,480
May	81,189
June	81,060
July	83,452
August	80,352
September	72,870
October	73,811
November	69,210
December	72,540
Total, 1925	930,507

Rockdale-Minerva

January	14,522
February	13,065
March	13,516
April	12,480
May	16,275
June	18,030
July	24,614
August	24,552
September	25,650
October	29,233
November	30,210
December	31,217
Total, 1925	253,366

Callilham

January	15,841
February	11,345
March	10,602
April	9,210
May	9,879
June	7,920
July	9,331
August	9,331
September	8,460
October	7,998
November	7,890
December	7.750
Total, 1025	115,557

Jim Hogg County

January	196,695
February	191,765
March	189,472
April	157,200
May	146,382
June	127,230
July	125,550
August	116,064
September	110,100
October	101,866
November	96,450
December	102,486
Total, 1925	1,661,260

Lockhart

April	74,010
May	252,382
June	360,900
July	376,929
August	370,140
September	365,950
October	347,665
November	284,250
December	283,340
Total, 1925	2,715,566

Gross Production by Fields Compared With 1924

Field—	1925 Gross Prod.	1924 Gross Prod.
Luling	9,371,992	10,688,068
Laredo	1,464,731	1,488,485
Somerset	930,507	910,765
Callilham	115,557	230,017
Rockdale-Minerva	253,366	195,457
Jim Hogg County	1,661,260	121,495
Lockhart	2,715,566	.....
Total	16,512,979	13,634,287
Inc. during 1925		2,878,692

Vast Quantity of Crude

The gross production for the Gulf Coast and Southwest Fields combined during 1925 is placed at 51,364,554 bbls., divided as follows: Gulf Coast, or heavy gravity crude, 34,851,575 bbls.; Southwest, light gravity, 16,512,979 bbls. The producing wells at the close of 1925 numbered 3,053 in the Coastal pools and 1,629 in the Southwest Fields. There are 30 producing areas in the Gulf Coast. The gross production for 24 years, of since the opening of the Spindletop Pool, is placed at 560,975,987 bbls. The period since 1921 includes the Southwest districts as they were developed.

The estimated gross for each year since 1901 is as follows:

Gulf Coast and Southwestern Fields Production

Total by years, 1901 to December, 1925, inclusive:

1901	3,593,112
1902	18,012,402
1903	16,146,191
1904	24,441,041
1905	34,610,882
1906	20,484,208
1907	16,241,460
1908	15,556,295
1909	10,755,299
1910	9,924,796
1911	11,402,184
1912	8,623,211
1913	8,649,152
1914	11,362,797
1915	21,198,083
1916	21,374,635
1917	23,975,694
1918	19,311,005
1919	23,839,043
1920	31,146,203
1921	*37,660,000
1922	†40,681,877
1923	†38,516,691
1924	43,800,374
1925	‡51,364,554
Total	560,975,987

*Includes Laredo and Somerset. †Includes Luling. ‡Includes Lockhart.

JOBBERS ACCEPTING LOWER MARGINS

(Continued from Page 142)

freight rate, of course, remains at 2½ cents at all times.

Thus the jobber is assured an adequate margin or percentage of profit which changes with his operating costs. The refiner at the same time is protected against a development in which the jobber secures as much or nearly as much for marketing the gasoline as he does for refining it, including the cost of crude.

Somewhat similar results are obtained in a contract which has had a limited application in the eastern states. In those contracts the jobber's margin starts with a 3-cent minimum margin with ¼-cent increase for 1-cent increase in the service station or tank wagon price. Thus the higher the retail market, the greater the jobber's margin.

In the Corcoran contract there will naturally be some disagreement as to what the jobber's percentage should be. The 30 per cent basis is merely a suggestion to illustrate the workings of the plan. Mr. Corcoran points out that the "current tank car price of gasoline could be easily worked into the contract on the same basis by dividing the difference between the current price and the contract price and adding or subtracting from the exact margins as given. For instance, the jobber's margin under retail gasoline price of 23 cents is 6.9 cents and the refiner's is 13.6 cents. Suppose the current market is 11 cents or 2.6 cents lower than the contract: Simply raise the jobber's margin of this diffference 1.3 cents and lower the refiner's margin by the same amount."

"Finally," Mr. Corcoran says, "this contract is not offered as a panacea for all the ills attending this particular branch of the industry but it does seem that it reduces the basic principles of marginal contracts to the principles of

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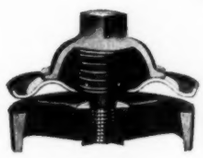

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can be operated as an inter-, after-, or pre-cooler for casinghead gas and is especially adapted to absorption and compression type natural gasoline plants.

This cooler **saves space** because its counter-current flow of gas and water, high rate of heat transfer, and the twin design in which it can be furnished result in the most compact construction on the market.

It **saves labor** because built so as to be easy to inspect, easy to clean, easy to erect, and easy to transport to new locations as required by changing plant conditions.

It **saves operating cost** because of its low gas pressure drop, sturdy, durable, trouble-proof construction, and highly efficient design.

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all business—that is profit and loss—and not to the basis of so many cents per gallon which may in one instance reflect gross profit of 50 per cent and the next instance 25 per cent.

EASTERN FIELDS

(Continued from Page 62)

duction, extending southwest, and operators are hopeful of finding new production and bringing the county into the producing list. In Union district, the Chartiers Oil Co. has the rig completed for a second test on the Pauline Millander farm. The Newcomb Oil & Gas Co. is drilling a test on the Kish Napper farm, in Stonewall district. Cabell County shows a little increase in development work. In McComas, Barboursville and Grant districts there is new work under way and starting, with Grant district leading the others.

In West Union district, Doddridge County, the Hope Construction & Refining Co. has part of the rig material at location on the Catherine McCauley and Lucinda Williams farms. In Central district, the Pittsburgh & West Virginia Gas Co. is building a rig on the W. A. Duckworth farm. In Union district, Lincoln County, C. C. Wolf has started to drill on the George Hudson farm. In Sheridan district, the Foote Oil & Gas Co.'s drilling machine caught fire and was consumed, on the Lee Sanson farm.

On Bull Creek, Walker district, Wood County, the Four S. Oil & Gas Co. has the rig completed for a test on the John Lambert farm. This is a wildcat, 1,600 feet northwest of the producer on the John W. Coplin farm. In the same district, Jonas & Parks have the rig completed for a second test on the Ewings heirs' farm. In Walton district, Roane County, the United Fuel Gas Co. is drilling on the T. S. Simmons farm. The same company is rigging up on the Ira S. Taylor farm. In Reedy district, the Heck Oil Co. has started to drill on the B. L. Marford farm. In the same district, the same company is due in the sand at a second test on the J. W. Conley farm.

To Drill Deep Well Deeper

The Peoples Natural Gas Co. has decided to go back and try to drill deeper its first well on the Booth-Flinn property, near Ligonier, Westmoreland County. This is the first of three deep wells drilled on Chestnut Ridge. When they had reached a depth of 6,822 feet the tools were lost in the hole and a protracted fishing job followed. When they decided to abandon the hole they left the tools, a rope knife, 150 feet of 3-inch tubing and 160 feet of wire line in the hole.

No effort will be made to recover this accumulation of metal and they will endeavor to drill past it. The well is still making some gas and they expect a large well if they can successfully drill it below the depth at which it was abandoned.

The rig is now building and drilling will begin early in the spring. The second deep test was drilled on the Seger Brothers farm and abandoned at a depth of 6,880 feet. The second test on the Booth-Flinn property was drilled to a depth of 7,756 feet and abandoned. However, it is still producing considerable gas.

SUNBURST AND ARTESIA WERE 1925 FEATURES

(Continued from Page 116)

Wall Creek sands, lying, respectively, about 1,500 and 2,200 feet deep, and below these two sands is the third Wall Creek that is lenticular and is found productive over a part of the field only. Below the third Wall Creek is found the Dakota sand, usually with water in it and not oil bearing; then about 60 feet under the Dakota lies the Lakota, oil bearing and in the central part of the structure, the Lakota will be around 2,400 feet below the surface. Still on down below the Lakota is the Sundance at about 2,800 feet in the higher part of the structure, and this has had one well drilled that found the Sundance sand oil bearing in commercial quantities. This is the deepest well drilled in Salt Creek so far and on down below is known to be the Embar, Tensleep, Amsden and Madison sands, which still have their story to tell.

The Salt Creek Field had a total of 1,762 wells at the close of 1925. At the close of 1924 it had 1,347 wells, showing an increase of 415 producers in the past year. The above figures do not take into consideration the Teapot Dome which is in reality a part of the Salt Creek structure, though separated from it by a rather narrow neck at the south end of the Salt Creek Field.

Up to the close of 1924, the existence of an oil bearing sand below the Dakota at Salt Creek was a theory held by geologists. The Midwest Refining Co. started a test on Section 35-40-79, that finally proved the Lakota to be oil bearing. The first well completed on Section 25-40-79, had had so much trouble with the casing and water and mud that it was still undecided at the close of 1924 whether the Lakota would be productive or not. It is now an assured fact and the Lakota Pool is probably controlled entirely by the Midwest Refining Co. and its subsidiaries. On Section 19-39-78, the Kinney Coastal Oil Co. drilled into the Lakota, but found it water bearing there and then the Continental Oil Co. (formerly Mutual Oil Co.) drilled a deep test on Section 2-39-79 that also reached the Lakota, but found no oil.

The gas pressure had been failing in the Salt Creek Field for the past three years and at the close of 1924 the pressure had reached a point where it no longer flowed the wells as in the past. The need of some other means of obtaining production was apparent in 1924 and the Midwest Refining Co., looking to the future, started a great electrical plant at the north end of the Salt Creek Field in November, 1923, and completed it in November, 1924. In January of 1925 this plant was operating and producing the power for pumping and drilling wells in the Salt Creek Field on all the Midwest Refining Co.'s properties and during 1925 it has proven a great means of power saving and oil field operation.

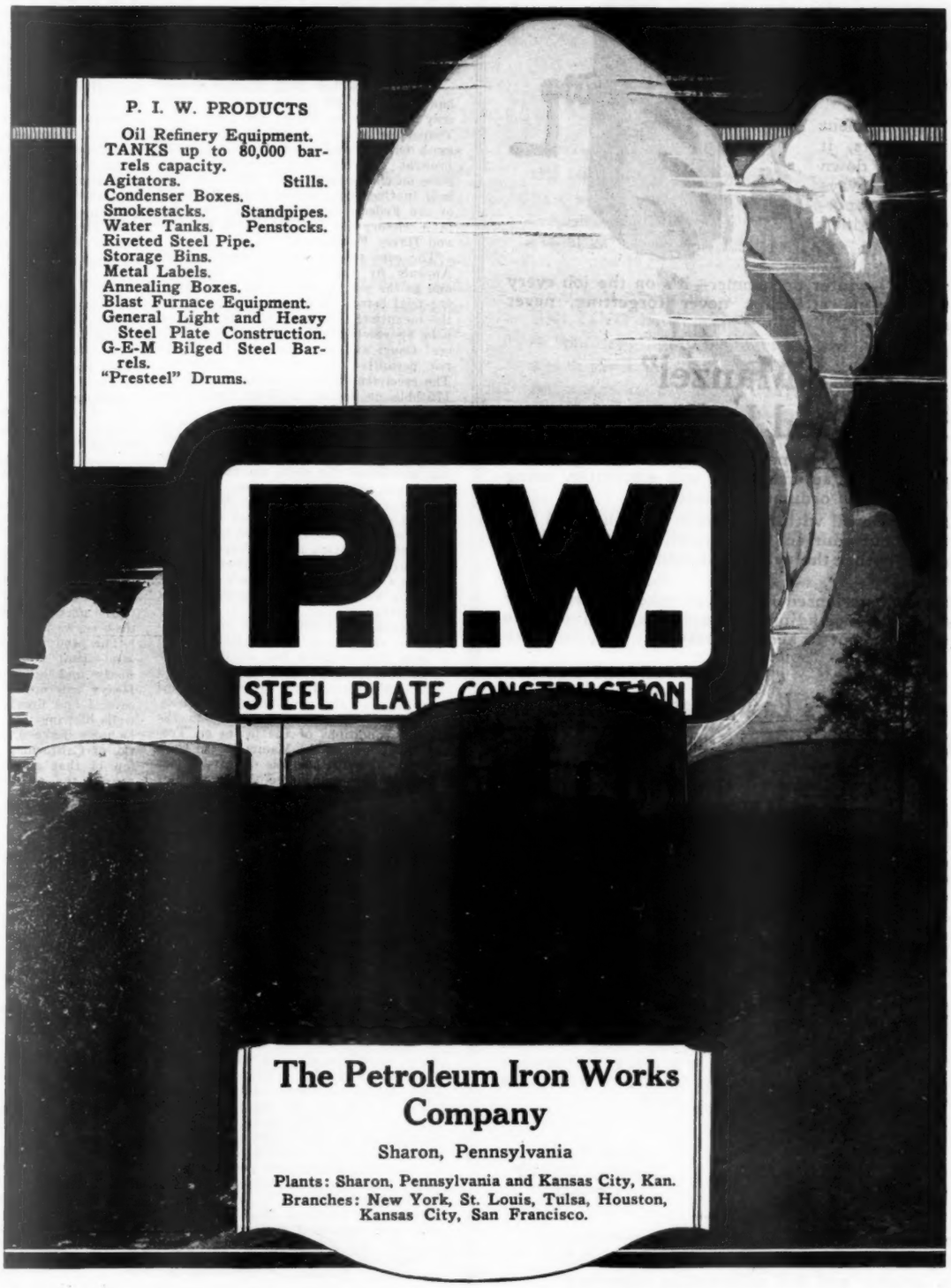
During 1925, the Intermountain Water & Power Co. laid a 20-inch wood stave pipe line from the old Shiloh well on the Tisdale structure, west of Salt Creek, to the field, for carrying water from the well to the field to supply the operators and towns. The Shiloh well was drilled on the Tisdale structure in 1917 when it was considered that the Tisdale structure might be found oil bearing, instead the well found a great water flow in the Tensleep sand and this is being utilized to provide water for the field. The main water line is about 8 miles long and the laterals cover practically all of the Salt Creek Field.

Fixed a Stable Price

The Midwest Refining Co. announced that Mid-Continent market prices for crude would be paid for all Salt Creek oil under contract and this settled the vexing question that has bothered all operators in Salt Creek for several years past. The New York Oil Co. bought the Central Pipe Line Co.'s line from Salt Creek to Casper, which has been carrying the production of several leases to the White Eagle and The Texas Co.'s refineries at Casper. The New York changed this pipe line from an oil carrier to a gas line to supply Casper with gas from Teapot Dome.

The Continental Oil Co. drilled a deep test on Section 2-39-78, testing the Lakota sand there and drilling below the Lakota, after losing the diamonds used in the core drill several times and encountering much trouble. The hole was abandoned as dry in the Lakota and definitely shut off the southern end of the field as carrying oil in the Lakota sand.

The Midwest Refining Co. drilled a deep test on Section 23-40-79 through the Lakota sand and found a producer good for an estimated production of 1,500 bbls. This is the first well to reach the Sundance sand in Salt Creek Field and the well is located close to the axis of the structure. The depth is 2,896 feet and this proves a new producing horizon in



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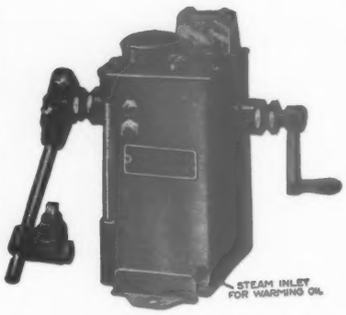

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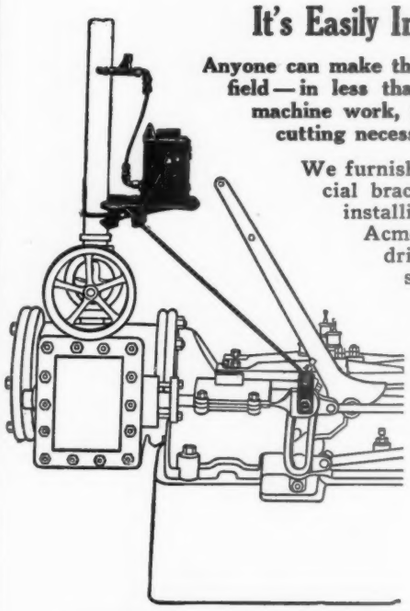

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Salt Creek that will be developed when the upper sands fail. The policy of the Midwest is merely to test the deeper sands, as the Lakota and Sundance, and then shut in the wells for the present until the production is needed. After completing the Sundance well, the Midwest Refining Co. started a deep test that is expected to make a complete test of all sands. This well is located on Section 35-40-79, and the well was started with a 20-inch hole, it is expected that this test will penetrate the Embar, Tensleep and Madison below the Sundance. At the close of the year this test was at 2,100 feet.

Teapot Dome

At the close of 1925, Teapot Dome had a total of 62 producing wells, with only 1 completion during the year. The Teapot Dome was leased by the Mammoth Oil Co. and later the Government brought suit for an annulment of the lease on charges of fraud. The trial was held in Cheyenne, before Judge Kennedy of the Federal Court there and resulted in a victory for the Mammoth Oil Co. and Harry F. Sinclair.

The case was carried to the Court of Appeals by the Government attorneys and as the year closed it was still awaiting trial before the Court of Appeals. In the meantime, the Teapot Dome is being held by receivers appointed by the Federal Court and the Mammoth Oil Co. is not permitted to operate the property. The receivers drilled 1 producer good for 175 bbls. on Section 20-39-78, finding the pay at 2,881 feet.

By an agreement with the receivers of Teapot Dome and the Mammoth Oil Co. the New York Oil Co. contracted to take the gas from the wells on the Teapot Dome and extract the gasoline, using the gas for a fuel supply in the New York Oil Co.'s lines at Casper and Glenrock. The New York Oil Co. placed a gasoline compression station in the Teapot and is now carrying the gas to Casper through the old Central Pipe Line Co.'s line that formerly was an oil line from Salt Creek to Casper.

Burke & Co., holding some permits on the east side of the Teapot Dome, drilled a deep test to 2,000 feet on Section 2-38-78 that passed through the Shannon sand at 850 feet. Later this sand showed some oil and the well pumped 65 bbls. daily for a short time. Owing to the tangled conditions of the leases on Teapot Dome, due to the Mammoth Oil Co.'s trial, nothing further was done with this well, but it is considered that a shallow sand pool in the Shannon sand lies on the east side of Teapot Dome.

Active Montana Fields

The Sunburst Field is located in Toole County, near the Canadian boundary. Two sands are found productive, the Kootenai at 1,200 feet and the Ellis sand at 1,500 feet. The Kootenai sand produces a good grade of oil, but the production is limited to only a small part of the field. The Ellis sand is being extended to the southeast and is fairly regular. However, the oil contains some sulphur and is not as good a grade as in some other fields.

The shallow depth at Sunburst and the consequent low cost of operation has drawn many operators to that field with the usual result of a large number of wells being completed and production being thrown on the market in large quantities. The pipe lines were unable to carry all the oil at the close of 1925 and an order was received to pro rate all runs from leases to 40 per cent of the total. The field is capable of producing about 12,000 bbls. daily, but the pipe line is only handling about 7,000 bbls. daily and is placing storage for the remainder.

The Sunburst Field had 369 producing wells at the close of 1925. The Potlatch Oil Co. drilled a deep test on the east side of the field to test the lower horizons, but failed to find anything commercial below the Ellis sand. On the south and southeast edge of the field, the operators found producers good for 2,000 to 3,000 bbls. initial production in the summer of 1925.

The Illinois Pipe Line Co. relaid its lines in the Sunburst Field during the summer of 1925 as the old 4-inch line could not carry the production. The new line is 6-inch and the Illinois ships the crude across the Canadian boundary to Coutts in Alberta from which point it goes by rail to the Imperial Oil Co.'s refinery at Regina, in Saskatchewan.

Cat Creek Field

Cat Creek is located in central Montana, in Petroleum County and has 167 producing wells. The field is somewhat freakish, for the crude comes from the wells quietly and there is no gas in the whole area, still the crude averages 42 degrees gravity. Two sands are produced from, the first and second Kootenai, and the production goes to Winett by pipe line, about 22 miles south of the field, from which point it is sent by rail to refineries.

During 1924 and 1925, the California Co. drilled some wells in the west end of the field and found a small pool there in the second sand, but this pool failed to extend as far out as expected. The Kessling Oil Co. drilled on Section 21-15-30, across the Musselshell River from the field, struck a showing of oil that may extend the field on the east side with future development.

Lake Basin Field

The Lake Basin Field is located 35 miles northwest of Billings, in Stillwater County. The Midwest Refining Co. drilled a deep well that found oil at 3,750 feet, but the crude contains so much paraffin that it requires steaming to pump from the wells. The Midwest stored the crude for a time and in the fall of 1925 abandoned the three producers. The Barnsdall interests are still testing the field.

Colorado Activities

The Fort Collins Field in Colorado, includes three structures, Fort Collins, Wellington and Douglas Lake domes. The field has 7 producing wells owned by the Union Oil Co. of California and that firm practically controls all the best acreage. It is located in Larimer County, the south end of the field starting near Fort Collins and running north for 16 miles to the north end of the Wellington structure.

The production is found in the Muddy sand about 4,500 feet and the wells are costly and long in making completion. Heavy gas pressure is encountered and several bad fires have resulted from the wells blowing wild. One dry hole on the Douglas Lake Dome by the Union Oil Co. of California, Section 36-9-69, at the top of that structure found water and caused the abandonment of that dome completely.

The oil is shipped by rail from the field to Wyoming and Utah refining points and gas is being piped to Fort Collins and to Cheyenne, Wyoming, from the field. The Union Oil Co. is placing a gasoline compressor plant at Fort Collins. In order to hold in the great gas pressure encountered in these wells, the Union Oil Co. has placed a solution of barium sulphate in the wells while drilling in, this is the first time this chemical has been used in this region for this purpose.

Moffat Field

The Moffat Field is located high up on the divide in northern Colorado, 15 miles south of Craig, Moffat County, which is the rail point. The Transcontinental and The Texas Co. brought in the field in 1924, and in 1925 the Midwest Refining Co. found production in the shale on the Iles Dome south of the Moffat Field. The Texas and Transcontinental have 4 producing wells in Moffat, but the sand lies deep, around 4,500 feet, and the development is costly and slow. The wells also seem to show a tendency to fall off in production. The Midwest has two producing wells at Iles Dome.

Tow Creek

Tow Creek Field was discovered by The Texas Co., Section 7-6-86, Routt County, early in 1925. The well is located close to the railroad and the production is shipped out by rail. Only one well is on production at the close of the year and the depth is about 2,800 feet for the area. The oil is shipped to Casper, to the refinery of The Texas Co.

Rangeley Field

The Rangeley Field was first drilled

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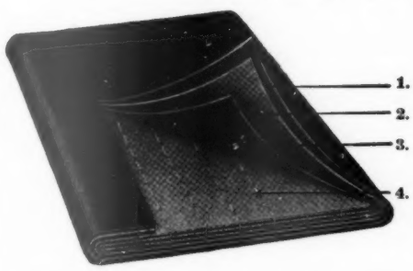

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about 1904 and oil was found in the shale around 900 feet. In 1925, the Midwest Refining Co. and The Texas Co. drilled two deep tests that discovered a great gas pressure in the Lakota sand about 3,000 feet deep. At the end of 1925 the field had 6 producing oil wells and 2 deep gassers, it is located in Rio Blanca County, over the Great Divide and along the west boundary of Colorado.

New Mexico's Developments

New Mexico has four oil fields with Artesia as the premier of the State's operations. It is located in the southeast part of the State in Eddy County and at the close of 1925 had 100 wells producing oil. The production comes from about 2,000 feet, though a recent test by the Ohio Oil Co. has uncovered another sand about 2,400 feet that is considered as another producing area.

Hogback

The Hogback Field is located in the northwest part of New Mexico, in San Juan County. The rail point for this district is Farmington and the production is sent by rail to refining points. The Hogback well average is around 750 feet in depth and at the close of 1925 there were 7 wells producing a very high grade crude with a gravity of 65 degrees. This oil is so light that the producing companies have been shipping in heavy oils and still bottoms from the refineries in order to hold the light oil until it reaches the refineries.

Rattlesnake Field

Like Hogback, this field is also in San Juan County and Farmington is the rail point. The pay is found about 750 feet and Rattlesnake has 11 wells producing a high-grade oil like that at Hogback as the year ends.

Table Mesa Field

The Continental Oil Co. has one producer on Table Mesa and is preparing to open a new field there. It is in San Juan County and the oil is the same high grade as Rattlesnake and Hogback.

WYOMING

Completions By Districts for 1925

District—	Comp.	Prod.	Dry	Gas
Big Muddy	2	70	0	0
Salt Creek-Teapot	505	60,073	6	1
Lance Creek	5	1,745	2	0
Big Horn Basin	27	2,597	10	4
Lost Solider	51	3,804	18	16
Rock River District	17	485	11	2
Fremont County	3	260	5	0
Osage	3	110	1	0
Natrona County	9	385	7	0
Lincoln and Unita	5	625	1	0
Baxter Basin	4	0	1	3
Carbon County	6	40	4	0
Johnson County	5	0	4	1
Crook County	3	0	3	0
Weston County	1	0	1	0
Total, 1925	651	70,194	74	27
Total, 1926	664	112,695	43	23
Difference	*13	*42,501	31	5

*Decrease.

Completions By Months

Months—	Comp.	Prod.	Dry	Gas
January	29	5,152	7	1
February	23	1,984	3	3
March	31	2,661	3	5
April	42	6,465	3	0
May	44	3,250	4	1
June	62	3,361	9	7
July	64	5,295	6	3
August	97	7,389	14	1
September	78	9,366	3	3
October	59	6,192	6	0
November	58	6,208	7	3
December	64	12,881	9	1
Total, 1925	651	70,194	74	27

MONTANA

Completions By Districts for 1925

District—	Comp.	Prod.	Dry	Gas
Sunburst	344	53,392	100	11
Cat Creek	25	731	7	0
Blaine County	2	0	1	1
Wheatland County	1	0	1	0
Cascade County	2	0	2	0
Yellowstone County	5	0	4	1
Stillwater County	7	150	4	1
Big Horn County	2	0	2	0
Liberty County	1	0	1	0
Chouteau County	2	0	2	0
Musselshell County	1	10	0	0
Fergus County	1	0	1	0
Big Otter	1	0	1	0
Golden Valley County	1	0	1	0
Total, 1925	395	54,283	127	14
Total, 1924	170	27,744	58	8
Difference	225	26,539	69	6

Completions By Months

Month—	Comp.	Prod.	Dry	Gas
January	37	30	4	1
February	39	1,655	4	0
March	11	160	8	0
April	18	1,045	2	0
May	19	8,470	5	0
June	41	5,936	11	0
July	46	5,515	11	3
August	70	5,902	20	2
September	50	4,413	18	2
October	46	10,084	12	4
November	48	8,742	18	2
December	30	2,331	14	0
Total, 1925	395	54,283	127	14

UTAH

Completions By Districts for 1925

District—	Comp.	Prod.	Dry	Gas
Unita County	1	0	0	1
Grand County	1	0	1	0
Daggett County	1	0	1	0
San Juan	1	400	0	0
Total, 1925	4	400	2	1
Total, 1924	6	0	4	1
Difference	*2	400	*2	*1

*Decrease.

Completions By Months

Month—	Comp.	Prod.	Dry	Gas
April	1	0	0	1
May	1	0	1	0
September	1	0	1	0
December	1	400	0	0
Total, 1925	4	400	2	1

COLORADO

Completions By Districts for 1925

District—	Comp.	Prod.	Dry	Gas
Larimer County	13	5,430	4	1
Boulder County	3	0	3	0
Moffat County	16	4,240	9	0
Delta County	1	0	1	0
LaPlata County	2	0	2	0
Routt County	4	200	3	0
Mesa County	2	0	2	0
Rio Blanco County	6	0	1	5
Yuma County	1	0	1	0
Montezuma County	1	0	1	0
Pueblo County	3	50	1	0
Fremont County	6	90	4	0
Garfield County	1	0	1	0
Huferno County	1	0	1	0
Total, 1925	59	10,010	34	6
Total, 1924	11	9,330	5	2
Difference	48	680	29	4

Completions By Months

Month—	Comp.	Prod.	Dry	Gas
January	6	130	5	0
February	2	200	1	0
March	3	1,000	1	0
April	5	0	5	0
May	4	50	1	3
June	7	240	5	0
July	10	2,050	7	1
August	6	1,450	4	0
September	3	610	0	1
October	4	1,230	1	0
November	5	1,050	2	1
December	4	2,000	2	1
Total, 1925	59	10,010	34	6

NEW MEXICO

Completions By Districts For 1925

District—	Comp.	Prod.	Dry	Gas
Artesia	150	16,290	14	1
San Juan County	27	5,866	10	0
Saccorro County	1	0	1	0
Chaves County	1	0	1	0
Colfax County	1	0	1	0
Total, 1925	180	23,156	27	1
Total, 1924	13	2,307	2	0
Difference	167	20,849	25	1

Completions By Months

Month—	Comp.	Prod.	Dry	Gas
January	3	280	0	0
February	3	1,176	0	0
March	6	1,085	1	0
April	9	2,130	0	0
May	4	280	0	0
June	10	1,225	2	0
July	26	1,985	6	0
August	16	2,020	3	1
September	22	2,725	2	0
October	29	5,039	3	0
November	24	2,862	6	0
December	28	2,350	4	0
Total, 1925	180	23,156	27	1

ROCKY MOUNTAIN AREA

Production By Districts for 1925

	Barrels
Salt Creek	21,680,070
Teapot	652,082
Big Muddy	1,207,630
Gross Creek	1,312,340
Elk Basin	309,360
Greybull	11,470
Rock River	1,116,510
Notches	35,731
Lance Creek	334,275
Rex Lake	13,360
Poison Spider	217,670
Osage	125,985
Hamilton Dome	230,580
Mule Creek	130,760
Byron	21,120
Lander	90,230
Pilot Butte	23,445
Lost Soldier	1,621,730
Ferris	33,430
Cat Creek, Mont.	1,218,618
Sunburst, Mont.	2,895,910
Lake Basin, Mont.	8,125
Florence, Colo.	98,795
Moffat, Colo.	591,237
Iles, Colo.	4,467
Ft. Collins, Colo.	399,535
Boulder, Colo.	7,660
Tow Creek, Colo.	37,226
Rangeley, Colo.	32,705
Hogback, New Mex.	176,050
Rattlesnake, New Mex.	129,708
Artesia, New Mex.	797,859
Miscellaneous	61,525
Total, 1925	35,620,198
Total, 1924	42,510,516
*Difference	6,890,318

*Decrease.

Production By Months

	Barrels
January	2,625,350
February	2,676,335
March	2,734,235
April	2,744,681
May	2,799,542
June	2,754,498
July	3,129,199
August	3,250,448
September	3,235,625
October	3,394,996
November	3,088,121
December	3,187,164
Total, 1925	35,620,198

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METAL STEEL – BRASS ALUMINUM BRONZE MONEL METAL STAINLESS STEEL **BALLS**

ATLANTIC COAST PORT RECEIPTS DECLINE IN 1925

(Continued from Page 116)

The following table shows receipts by months from the Gulf Coast, Pacific Coast, Mexico and other imports, and total for 1925 and 1924 (in barrels, estimated):

	Gulf Coast	Pacific Coast	Mexico	Other Imports	Grand Total
1925—					
December	9,202,000	1,739,000	2,803,000	394,000	14,138,000
November	7,868,000	1,137,000	2,422,000	377,000	11,804,000
October	7,753,000	1,099,000	2,434,000	663,000	11,949,000
September	9,297,000	1,985,000	1,978,000	284,000	13,544,000
August	9,043,000	1,669,000	2,457,000	383,000	13,552,000
July	12,067,000	1,968,000	3,109,000	260,000	17,404,000
June	11,397,000	1,963,000	3,438,000	125,000	16,923,000
May	9,712,000	2,501,000	4,238,000	240,000	16,691,000
April	10,679,000	2,338,000	2,845,000	182,000	16,044,000
March	8,524,000	2,505,000	3,866,000	324,000	15,219,000
February	7,307,000	1,445,000	3,636,000	478,000	12,866,000
January	9,657,000	2,364,000	3,856,000	271,000	16,148,000
Total	112,506,000	22,713,000	37,082,000	3,981,000	176,282,000
1924—					
December	9,487,000	2,604,000	2,639,000	50,000	14,780,000
November	7,483,000	2,397,000	4,283,000	257,000	14,420,000
October	7,698,000	3,749,000	2,641,000	72,000	14,160,000
September	8,222,000	3,105,000	2,718,000	329,000	14,374,000
August	9,668,000	3,923,000	2,281,000	310,000	16,182,000
July	9,872,000	2,648,000	3,016,000	577,000	16,113,000
June	9,194,000	3,963,000	3,850,000	329,000	17,336,000
May	8,530,000	3,829,000	3,992,000	436,000	16,787,000
April	7,878,000	4,223,000	3,498,000	231,000	15,830,000
March	6,271,000	4,255,000	3,769,000	290,000	14,585,000
February	5,066,000	5,111,000	3,153,000	.....	13,330,000
January	4,579,000	4,938,000	2,468,000	.....	11,985,000
Total	93,948,000	44,845,000	38,308,000	2,881,000	179,982,000

The Port Arthur district made the largest contribution to receipts from the Gulf Coast during 1925, amounting to 44,999,000 bbls., although the Houston district was not far behind with 42,193,000 bbls. The feature of 1925 was the gain made by the latter district over 1924, when it contributed only 30,983,000 bbls. to Atlantic receipts.

Receipts from the Baton Rouge district in 1925 also increased over those of 1924, amounting to 25,314,000 bbls., compared with 19,269,000 bbls.

The following table shows receipts from the Gulf Coast divided into the three principal shipping districts, by month, for 1925 and 1924 (in barrels, estimated):

	Baton Rouge and New Orleans	Pt. Arthur, Sabine, Beaumont	Texas City, Houston, Galveston	Total Gulf Coast
1925—				
December	2,710,000	3,759,000	2,733,000	9,202,000
November	1,818,000	3,120,000	2,930,000	7,868,000
October	1,908,000	3,238,000	2,607,000	7,753,000
September	2,334,000	4,155,000	2,808,000	9,297,000
August	2,629,000	3,075,000	3,339,000	9,043,000
July	2,525,000	4,816,000	4,726,000	12,067,000
June	1,772,000	4,546,000	5,079,000	11,397,000
May	1,313,000	4,589,000	3,810,000	9,712,000
April	2,159,000	3,884,000	4,636,000	10,679,000
March	1,527,000	3,257,000	3,740,000	8,524,000
February	1,602,000	2,783,000	2,922,000	7,307,000
January	3,017,000	3,777,000	2,863,000	9,657,000
Total	25,314,000	44,999,000	42,193,000	112,506,000
1924—				
December	1,995,000	3,161,000	4,331,000	9,487,000
November	1,432,000	3,198,000	2,853,000	7,483,000
October	1,867,000	3,118,000	2,713,000	7,698,000
September	1,897,000	3,854,000	2,471,000	8,222,000
August	3,286,000	3,679,000	2,703,000	9,668,000
July	2,390,000	4,470,000	3,012,000	9,872,000
June	2,065,000	4,037,000	3,092,000	9,194,000
May	1,481,000	3,879,000	3,170,000	8,530,000
April	1,236,000	4,229,000	2,413,000	7,878,000
March	532,000	3,425,000	2,313,000	6,271,000
February	533,000	3,307,000	1,226,000	5,066,000
January	554,000	3,339,000	686,000	4,579,000
Total	19,269,000	43,696,000	30,983,000	93,948,000

Imports from countries other than Mexico are of interest as they give an indication of the use of foreign oil in American refineries and in American markets, aside from Mexican oil. In 1925 these imports totaled 3,981,000 bbls., a daily average of 11,000, compared with 2,881,000 bbls., or 8,000 bbls. daily in 1924.

Estimates are made by eastern refiners and marketers that imports from countries other than Mexico will equal 10,000,000 bbls. at Atlantic ports alone during 1925. These, as in 1925 and 1924, will come from South America, principally from Venezuela, Peru and Colombia.

ATLANTIC COAST PORTS RECEIPTS FOR JANUARY

(Continued from Page 148)

The decline in receipts from the Gulf Coast is accounted for principally by smaller shipments from the Baton Rouge-New Orleans district. These averaged 60,000 bbls. daily in January, 1926, compared with 87,000 bbls. in December, a decrease of 27,000 bbls.

January, 1926, imports from Mexico are estimated at 1,999,000 bbls., a daily average of 65,000 bbls., compared with 2,803,000 bbls., or 90,000 bbls. daily, in December. On the other hand imports from South America in January totaled 973,000 bbls., 31,000 bbls. a day, a high record, compared with only 394,000 bbls., or 13,000 bbls. a day, in December.

The following table gives a comparison of imports from the two principal sources in January, 1926, December, 1925, and January, 1925, (in bbls.):

	Jan., 1926	Dec., 1925	Jan., 1925
Mexico	1,999,000	2,803,000	3,856,000
South America	973,000	394,000	271,000
Total	2,972,000	3,197,000	4,127,000

The daily average figures, in bbls., are as follows:

	Jan., 1926	Dec., 1925	Jan., 1925
Mexico	65,000	90,000	124,000
South America	31,000	13,000	9,000
Total	96,000	103,000	133,000

Of the imports from South America in January, 1926, a total of 463,000 bbls. came from Peru, 432,000 bbls. from Venezuela, and 78,000 bbls. from Trinidad.

FEW LONG PIPE LINES WERE BUILT IN 1925

(Continued from Page 148)

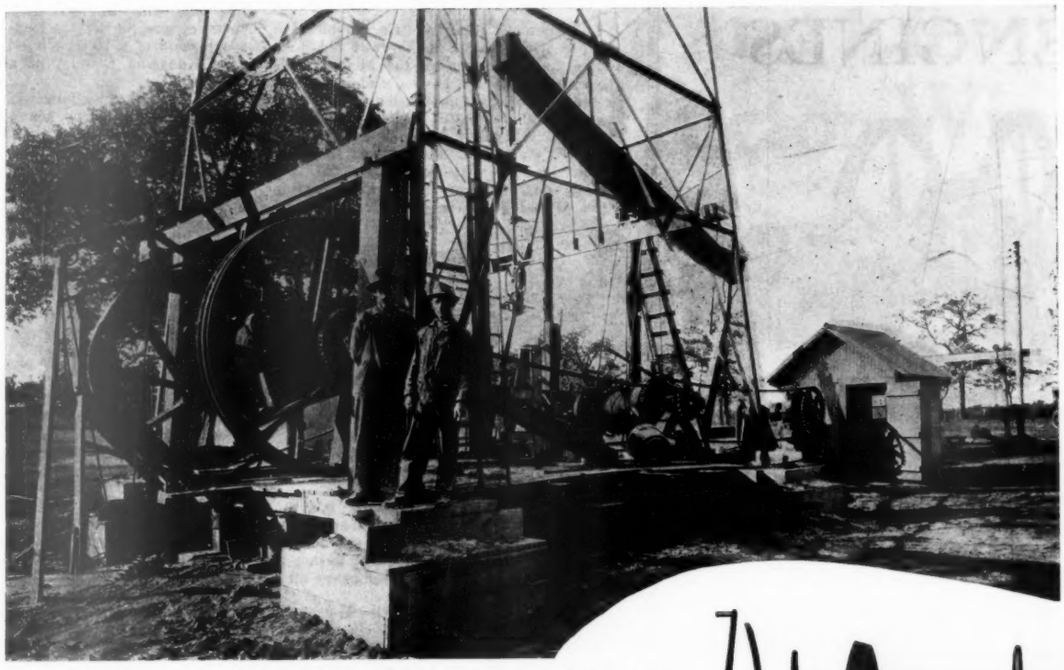
The Humble Pipe Line Co.'s big line from Comyn, in Comanche County, to the Big Lake Field in Reagan County, was planned in 1924 and considerable of the actual work of the laying the line was done in that year, although the line was not completed until March of 1925.

The same is true of extensions by The Texas Co. in the South Archer fields, although practically all that work was done in 1924. Likewise the three lines from the Electra to the comparatively new producing areas of Wilbarger County, near Vernon. The Sinclair, Humble and Waggoner lines were all started in 1924 and practically all the work of laying them completed before the advent of 1925.

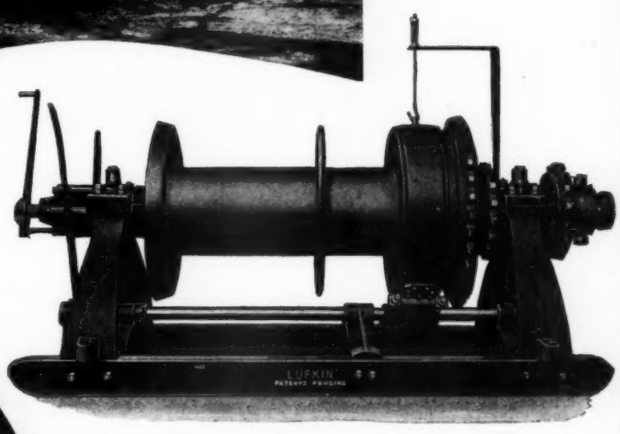
North Louisiana and Arkansas

There was considerable activity in pipe line construction in Arkansas and North

DRILLING---SWABBING---BAILING, In Oklahoma



"Drilling In," Shaffer Oil & Refining Co., Davenport, Okla.



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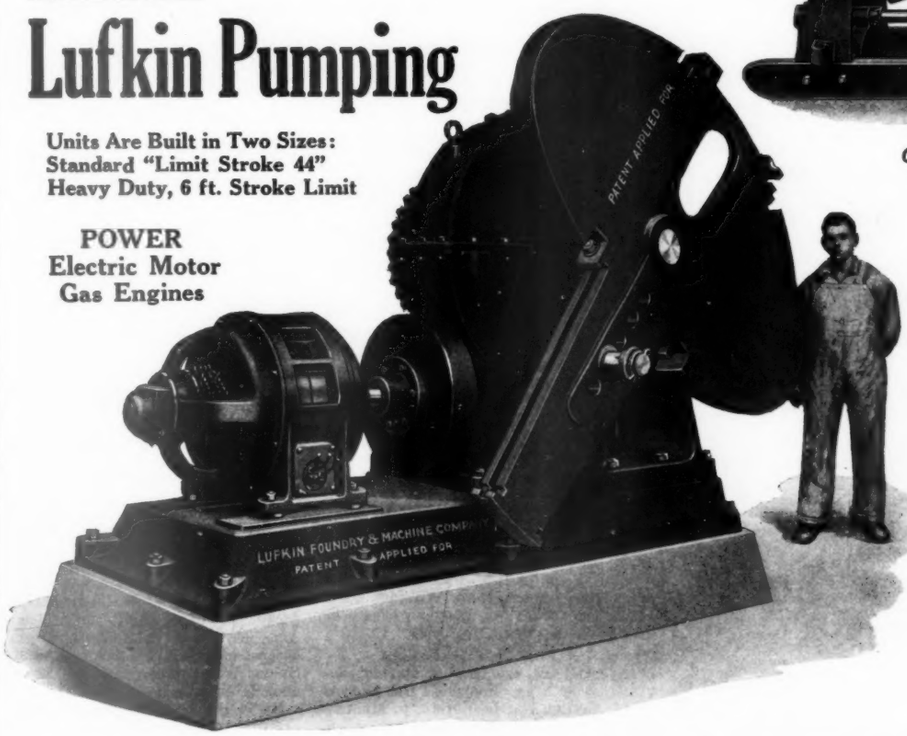

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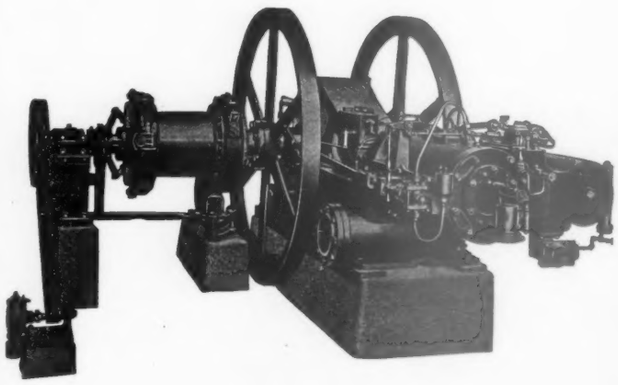
REID OIL ENGINES



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Louisiana during the early part of the year 1925, following the enormous production which resulted from the deep sand development in the Smackover Field, but the last half of the year showed very little activity along this line of development.

The Standard Pipe Line Co. completed its line from the Smackover Field to Grand Lake, a point on the Mississippi River, on August 25, having made a time-breaking record in construction. The line consists of 95 miles of 10-inch pipe, including six intermediate pumping stations, the work starting on May 6, and the oil turned into the line on August 25, a period consistsing of 67 working days. From Grand Lake the oil is transported by barge line to the Standard Oil Co.'s refinery at Baton Rouge.

The Gulf Refining Co. looped the north end of its line, extending from the Smackover Field to its refinery at Port Arthur, Tex., laying about 60 miles of 6-inch line and increasing its capacity to approximately 15,000 bbls. a day.

The Crusader Pipe Line Co., of Arkansas, built a line from the Norphlet Field in Arkansas to a point on the Mississippi River, near Vidalia, La. This is a 10-inch line, 157½ miles in length, and is fed by an extensive system of gathering line throughout the Smackover Field.

The Amerada Petroleum Corp. laid 4 miles of 6-inch line from the Smackover Field to its tank farm, 3 miles southeast of Norphlet, and 6 miles of 4-inch gathering lines through the Smackover heavy oil district.

The Root Refineries built approximately 15 miles of 6-inch, 4-inch and 3-inch line, extending its line from the El Dorado Field to the heavy oil territory at Smackover.

The Imperial Oil & Gas Products Co. laid 4 miles of 6-inch line through the Smackover Field and into its tank farm in Section 7-16-15, 2 miles northwest of Norphlet.

The Caddo Creek Refining Co. laid a 4-inch line from Norphlet to its plant on the Rock Island Railway, near El Dorado a distance of approximately 7 miles.

Gas Lines in Shreveport Area

Development of several important gas fields in the Shreveport territory has resulted in the expenditure of millions of dollars in laying gas lines through Arkansas, Louisiana and adjacent States.

The Magnolia Gas Co. built a line 25 miles in length, starting just south of Sarepta, in the Webster Parish, La., gas fields, and extending to Beaumont, Tex. The line is in three sections, of 14-inch 16-inch and 18-inch pipe, and supplies the refinery of the Magnolia Petroleum Co. at Beaumont with approximately 45,000,000 cubic feet of gas per day. Beaumont and other towns en route and in the vicinity of Beaumont are also supplied with gas. The company has two compressor stations, one at Latex, 2 miles south of Waskom, and one at Magasbo, 1½ miles north of Pineland.

The Shreveport Producing & Refining Co. built 18 miles of 4-inch line, extending from the Waskom, La., gas district to its refinery at Jewella, supplying fuel from the refinery.

The Commercial National Gas Co. completed a line from Waskom to Tyler, Texas, on November 23, and is now supplying Longview and Tyler with natural gas. The line is approximately 75 miles in length, 10-inch from Waskom to a point just south of Longview, and 8-inch from that point to Tyler.

Gas Line Into Mississippi

H. C. Morris, trustee, has started construction of a gas line from the Monroe Field, through Natchez, Miss., to Monroe, La., planning to supply these and other towns en route with natural gas from the Monroe district. The line has been completed through the swamps and lowlands in the vicinity of Natches, and it is expected to be serving Natches with natural gas by late winter. Approximately 500 men are employed on the job. Among the towns which it is expected this line will serve are Oak Ridge, Rayville, Mangham, Winnsboro, Gilbert, Florence, Clayton and Ferriday.

The Morris interests own or control the north end of the Monroe gas field, their open flow from 40 producing gas wells amounting to 500,000,000 cubic feet per day.

Extension in West Virginia

The only pipe line extension of any importance was that of the Hope Natural Gas extension of a 20-inch line from Gilmer to Kanawha County, at an outlay of $5,500,000.

The line is 100 miles long with laterals extending to the various gas pools, and the cost is not included in the trunk lines.

In Kentucky and Tennessee

The Stoll Oil Refining Co., of Louisville, Ky., completed a line from the Tinsley Bottom Pool, in Clay and Jackson Counties, Tennessee, to Windle, Tenn., a distance of approximately 18 miles, where the company has a loading rack on the Tennessee Central Railroad. The line is of 2 and 3-inch pipe.

In the Owensboro district, in northwestern Kentucky, the Indian Pipe Line Corp. laid 5 mile of 2-inch pipe to connect the White Plains Oil & Gas Co.'s production in the Midkiff Pool, Ohio County, with its main line at Collier Station. The Indian company also supplemented its 2-inch line from the Swope Pool with a 4-inch line.

The Paragon Development Co. laid a line in Cumberland County from Peytonsburg to the Reed wells on the Hughes farm at Pulsey Creek, a distance of 3 miles, and also a 5-mile line from the Hall Baker Pool to the Beaver Creek Pool in Barren County. The Vedder Oil Co. laid its own line from the Fannis Creek Pool to the Paragon tank farm on Sulphur Creek, in Cumberland County, a distance of 4½ miles.

On February 11, the Indian Pipe Line Corp. acquired the gathering system of the Paragon Development Co. in Warren and Simpson Counties, consisting of 100 miles of 2, 3, and 4-inch pipe; on May 15, the Indian purchased the 15 miles of line belonging to the Riggs Refiner, which went out of business several months ago. The Riggs line was in the Davenport Pool of Warren County.

CALIFORNIA REMAINS AN IMPORTANT FACTOR

(Continued from Page 105)

The Shell tried to open up a new field in the Weed Patch area about 8 miles southeast of Bakersfield, but its hole in Section 33-30-29 was abandoned in a granitic formation, while another, in Southern California, No. 1 Loomis at Bell, was dismantled after going 5,406 feet. No. 1 Menchego, just north of Brea Canyon in Section 36-2-10, was spudded in during the latter part of September but work has been held up for several months because of mechanical trouble. This company has been particularly active in tying up prospective oil land from one end of the State to the other, two particularly large leases being held near Oxnard and in the vicinity of Poso Creek. In the latter area, the company is assisting J. K. Porter, and will, undoubtedly, undertake to develop at least part of its holdings there some time later. Several wildcats were also drilled on the Kern River Bluffs during 1925 and, although the Shell did not go into this area, the Pan American, St. Helens and Central Oil Companies all were obliged to charge off their drilling expenses to profit and loss. The Pan American's test at 5,020 feet was the deepest but the 4,985-foot hole of the St. Helens was not far behind. The Kettleman Hills area looked might promising early in the year, but later developments diverted attention with the result that only a limited amount of work is being done at present. No. 1 Oschener of the General Petroleum showed considerable gas and some oil indications at one time but commercial production has not yet been secured. The company anticipated deep drilling when the venture was started and will probably resume work if the fish, which has been holding up work for several months, is successfully recovered. The Marland is also pros-

The Clark Drilling and Clean-Out Machine and Tractor Winch

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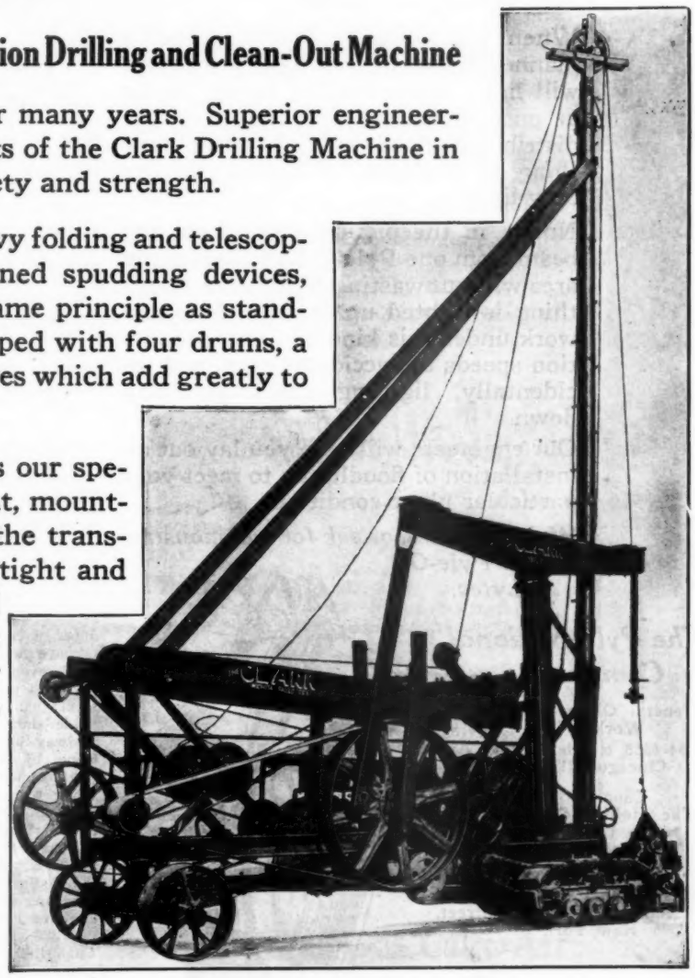

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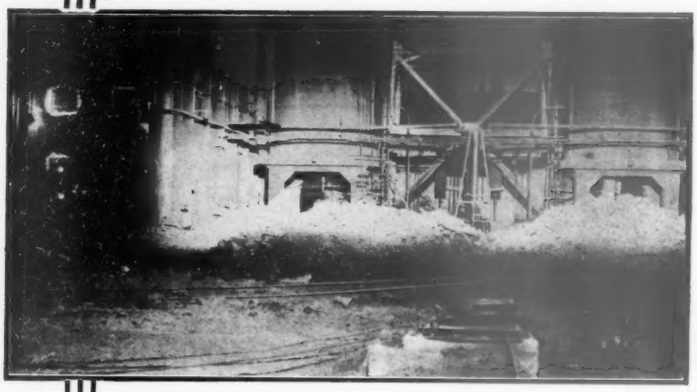

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pecting in this territory and indications point to additional work during 1926 by other operators. The Marland has only been wildcatting in California a comparatively short time but during this period several test have been put down at various points. One at Davidson City, midway between Long Beach and Dominguez, was abandoned at 4,500 feet, while another, No. 1 Williams in Santa Barbara County, is at present standing temporarily suspended at 2,645 feet. The company has developed production at Dominguez, Rosecrans, Kern River and Seal Beach but did not make the grade at Inglewood.

Miley's Deepest Producer

One of the most interesting events of the year was the completion of a 7,591-foot well in the Rosecrans Field by E. J. Miley, the cost running around $130,000. This is probably the deepest producing oil well in the world and while it is doubtful if it will ever pay out, it indicates the possibility of deeper drilling not only in this field but elsewhere. Miley and other operators established the productive limits of the Rosecrans district during the year and also disproved the existence of another structure just to the north. In this immediate area, the Pan American drilled two tests on its Anderson lease, while the Shell and Chanslor-Canfield Midway Oil Co. quit with one attempt each. The Standard limited production in the east, while the General Petroleum prevented extension to the west. As a whole, the Rosecrans Field was a distinct disappointment, although the Union and Barnsdall are sitting pretty.

Production Increased in 1925

During 1925, California produced a total of 230,147,342 bbls. of crude, this being the largest amount credited to the State during any calendar year, with the exception of 1923, when 263,728,895 bbls. were produced. The enormous figure reached during 1923 was, of course, directly attributed to development work at Santa Fe Springs, Huntington Beach and Long Beach, all three reaching their maximum during this period. State production declined somewhat during the following year, 1924, and although Santa Fe Springs and Huntington Beach both registered appreciable drops, Long Beach remained fairly stable and this, together with the peak production established at Torrance, prevented the State total from dropping below the 230,000,000-bbl. mark. It will be noted that the production during 1925 is practically the same as that registered during 1924, the exact output during the latter period being 230,063,117 bbls. This was due to increased production shown by Inglewood, Rosecrans, Dominguez and the Ventura-Newhall Fields. In view of the fact that California still holds the key which will unlock the door to prosperity within the industry, it is needless to say that she retained her position as the largest producer of crude oil during 1925, and may perhaps maintain this distinction during 1926, even though none of the present curtailed production is opened up. California has yielded 2,329,479,991 bbls. of crude since the first well was finished, Midway-Sunset with 551,253,320 bbls. being by far the largest contributor. Coalinga with 290,118,253 bbls. and Kern River with 255,597,824 bbls. follow and, although Long Beach has only been on the oil map for 5 short years, this remarkable field is credited with 187,741,921 bbls. Santa Fe Springs, which has the distinction of producing more crude than any other field in the State during any one calendar year, 79,781,275 bbls. in 1923, has only produced a total of 136,391,629 bbls. to date. This is, however, much more than some of the older areas have produced during their existence of 10 or 15 years. Ventura-Newhall, the oldest producing section in the State, is only credited with 48,428,983 bbls., but over half of this has been produced during the last 10 years. Coyote has yielded 100,071,202 bbls. during its 14 years of life but this figure will be substantially boosted when the deep zone in that area is developed.

In order to show the effect which each new field exerted on the State production during 1925, it might not be amiss at this time to make a few hasty comparisons. Production charts show that Inglewood yielded a total of 10,445 bbls. during 1924, being discovered in November of that year, and 18,348,395 bbls. during 1925. Rosecrans and Domiguez also showed appreciable gains, the former increasing from a total of 611,432 bbls. during 1924, to 7,263,466 bbls. during 1925, while the latter jumped from 6,811,531 bbls. in 1924 to 13,328,817 bbls. during 1925. Long Beach and Santa Fe Springs, on the other hand, suffered appreciable declines, but this was, of course, to be expected and is due to a general settling. Huntington Beach dropped off 1,646,046 bbls. but the output of 15,887,474 bbls. during 1925 compares quite favorably with that established during 1924. Production in this field during the entire year just closed was unusually stable and, since the production curve has flattened out, no appreciable change is anticipated in this field during the next several months. Output of crude in the Ventura-Newhall section more than doubled, due directly to development work in the Ventura Avenue Field where the Associated, General Petroleum and Shell met with unusual success. A comparison of the January, 1925 production of 427,071 bbls., with the accredited output during December of 1,139,026 bbls., illustrates the gain registered during the year and it is needless to say that the field will do much better in 1926.

Curtailing Old Production

Additional curtailment measures were taken in the older producing sections of the State during the year and, when comparing their present output, cognizance must be taken of this restriction. In several instances, however, fields have shown a larger production during 1925 in spite of this handicap. Midway-Sunset, Coyote and Fullerton are concrete examples and, although additional curtailment measures were taken during the year, the output during 1925 exceeded that of 1924. Increased drilling and the opening up of deeper horizons by the Federal Drilling Co. and Obispo Oil Co. were responsible for the gain made in the Midway-Sunset area, while the completion of several big flowing wells in the other two districts were reflected in the larger production for the year. That the Fullerton Field is still far from exhaustion is evidenced by the Brea Canyon Oil Co.'s No. 37, which came in doing 1,400 bbls. a day from 4,682 feet and the Shell's No. 3 Fisher, which made 1,170 bbls. daily from 4,928 feet. The Federal Drilling Co.'s deep sand discovery well at Midway, in Section 20-31-24, came in doing 2,150 bbls. daily from 4,836 feet and, while it has since declined to around 400 bbls., the Pacific Oil Co. is bringing in large wells quite regularly in Section 19-31-24, to the west and in Section 29-31-24 to the south. It is generally recognized that production in the Midway-Sunset area can be substantially boosted with additional drilling and it is quite possible that the Standard will proceed to drill up some of the property secured as the result of the recent merger of this company with the Pacific. It is a foregone conclusion that the Standard will not follow the same conservative policy adopted by the Pacific and permit its holdings to be unduly drained and for this reason the area should show a still larger production during 1926.

The increase at Fullerton was, as stated above, due to the completion of additional new wells, while the larger production at Coyote is attributed to development of the deep zone. This field, by the way, gives the Standard a good reserve which can be called upon for increased production as occasion demands. Elk Hills, as the result of the curtailment made during the summer, showed a smaller production during 1925 than that registered during 1924, but, since the producing limits of the field were extended by the Gross Drilling Co., additional work will be done during 1926, and this, together with the prospect of opening up a deeper producing horizon,

"Not size but *service*"

At the time of our recent consolidation with The Kelly and Jones Company, President Coonley published the following statement, which will be read with interest by everyone who knows the Walworth Company of today and its purpose and plans for tomorrow.

• • • •

"The Walworth and Kelly and Jones names have stood for more than half a century for the best in product and business integrity. It is gratifying that at a time when John T. Kelly and George M. Jones had earned a respite from their arduous labors, they should consider Walworth the most fitting company to carry forward their banner.

• • •

"During the present year Walworth has added two fine production units. It is fitting that our friends should know our purpose in their acquisition. It is not size nor sales volume that we are seeking. These are days when service counts more than anything else in industry. It is the ability to give maximum service to users all over the world that we are attempting to achieve. A mere glance at the map to locate our four present plants will indicate the facilities which we now have to offer.

• • •

"We do not intend to do away with the policies which Mr. Kelly and Mr. Jones have inaugurated. It is our most earnest desire to retain the trade which they have built up, by furnishing their customers the same sound merchandise while giving them improved service. It is more than ever essential for us to meet our customers' wishes as far as it is humanly possible. This we shall bend every effort to do.

• • •

"Incidentally, in our desire to simplify, we are changing the name of Walworth Manufacturing Company to Walworth Company. It is an evidence of the trend of our thought and action."

(Signed) Howard Coonley
President

From The Walworth Log
November, 1925

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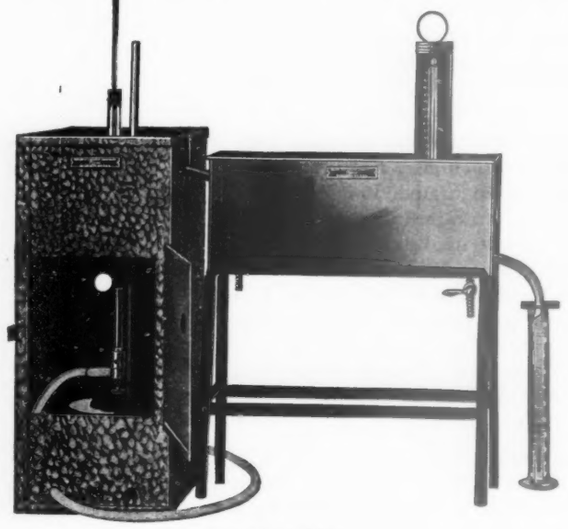

No. 1753
Distillation Apparatus

The term of "*Tycos* line" includes hydrometers, thermo - hydrometers, distillation apparatus, flash and fire test cups for illuminating, lubricating and fuel oils, viscosimeters, engraved thermometers, aneroid barometers and pyrometers for laboratory testing and checking purposes.

We shall be pleased to send an oil laboratory catalog upon your request.

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gives the field a good chance of surpassing the 1925 output during 1926. Production in the Santa Maria Field during 1925 was 260,914 bbls. under that of 1924, but, since there is in excess of 6,000 bbls. a day shut in and considerable undeveloped acreage, the output can be increased when the demand exists for heavy oil.

Crude Oil Stocks Increased

Total fluid stocks held at all points on the Pacific Coast increased 28,773,718 bbls. during 1925, the storage on hand January 1 being 125,021,964 bbls., as compared with 153,795,682 bbls. at the close of the year. As would naturally be expected, heavy crude and fuel oil showed by far the largest gain. At the beginning of the year this classification totaled 57,254,796 bbls. but during the 12 months 25,594,261 bbls. more were accumulated, bringing the stocks on hand December 31, to 82,849,057 bbls. Light refinable crude, that over 20 degrees in gravity, increased 3,771,259 bbls., jumping from 40,574,578 bbls. to 44,345,837 bbls. Both gasoline and tops decreased during the year, the former dropping off 784,925 bbls. and the latter 2,848,130 bbls. At the beginning of 1925, there were 10,957,487 bbls. of gasoline and 9,396,613 bbls. of tops on hand. At the expiration of the 12 months' period they had decreased to 10,172,562 bbls. and 6,548,483 bbls. respectively. The balance of the fluid stocks, including kerosene, asphalt, lubricants and other mineral oils, increased 3,041,253 bbls., the storage on January 1, being 6,838,490 bbls., and on December 31, 9,879,743 bbls. The accumulation in heavy crude was quite consistent throughout the year but the change in light oil was somewhat irregular. This grade of crude, built up to 45,261,831 bbls. at the close of May, dropped back to 41,216,021 bbls. in August, and again resumed its upward climb, reaching a total of 44,345,837 bbls. at the close of the year. Gasoline stocks increased 1,101,195 bbls. during the first 2 months and then started downward, reaching a low during the year of 9,668,725 bbls. on hand September 30. An increase was then registered during October, November and December but only 237,483 bbls. were accumulated during this period. Storage of tops declined consistently during the first seven months of the year, and while this commodity fluctuated to some extent during the last five months, the general tendency was downward.

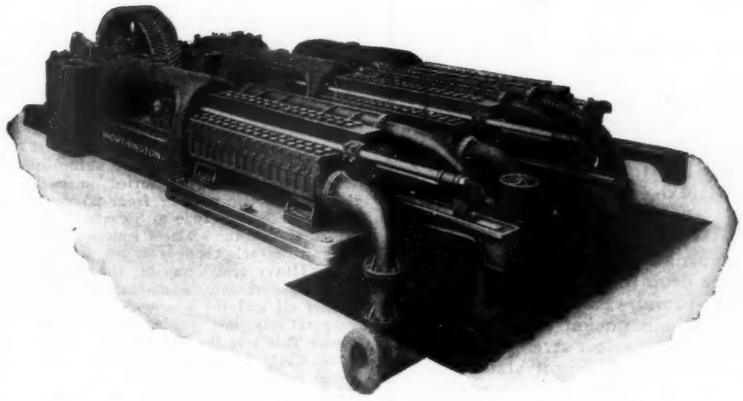
Falling Off in Drilling.

There were not as many wells drilled during 1925 as there were during 1924, but the results obtained were quite satisfactory. During the 12 months a total of 948 new wells were finished with an aggregate initial daily production of 506,969 bbls. This is an average of 79 new wells per month, or a little less than three a day. The average initial daily production was about the same as that secured last year but considerably less than the average of 1923, when Santa Fe Springs, Long Beach and Huntington were at their peak. The number of rigs erected during 1925 totaled 1,262 and this average of 105 per month compares quite favorably with an average of 103 during the preceding year. The number of abandonments was somewhat less than those recorded during 1924, but the previous high figure was due to the large number of holes abandoned in the old Salt Lake Field, which were discarded in order to permit the erection of new dwellings in that section.

It is rather surprising to note that the Midway-Sunset area led in the number of new wells completed, 182 new producers good for 51,795 bbls. daily, but Inglewood followed closely behind with 178 new wells good for an aggregate initial daily production of 202,458 bbls. The average initial daily well production was 285 bbls. and 1,137 bbls. respectively. Rosecrans is credited with 113 new wells, Torrance 111, Long Beach 105, Ventura-Newhall 45, and Huntington Beach 42, the balance being scattered throughout the other fields of the State. There were 233 new rigs erected at Long Beach, most of which were in the extension, and it would not be surprising if this field showed the largest amount of development work during 1926. Midway-Sunset is credited with 219 new rigs, and Inglewood with 218. Development work in the latter area has practically been concluded as far as the present horizon is concerned but the former field will show continued work. In the Rosecrans district 127 new derricks were erected but similarly this field will show a small amount of new work during the coming year. Long Beach showed by far the largest number of drillers abandoned, while Torrance lost the largest number of former producing wells. Abandonments in the latter area were due primarily to exhaustion, depletion and inability to pump economically and this field, together with Santa Fe Springs, will show further abandonments of wells not commercially profitable. The number of wells producing throughout the State is naturally increasing from time to time, reflecting, of course, the numerous new wells completed each month. It is interesting to compare the average number of producing wells, 11,393, which were on production during 1925, with the number producing a few years ago, and, while the present number is rather high, it will increase still further when those now shut in are again opened up. The average number producing during 1924 was 10,903, while during 1923, the average was 8,933. The largest number of new wells completed during 1925 occurred in June, when 119 were put on production and yielded an aggregate initial daily output of 73,150 bbls. This was an average of 615 bbls. per well. Completions during July, August and September were also fairly large, due to the number of new wells coming in at Inglewood.

Keen Marketing Competition

Operators throughout the State were unusually optimistic at the beginning of 1925, and the increase of 2 cents a gallon in gasoline announced on February 4, had a very stimulating effect. The substantial increase in the price of crude oil and the advance of 25 cents per bbl. in fuel oil made at the same time were also considered as good omens. Increased production at Rosecrans and Inglewood, however, took the edge off conditions and this led to a much keener competition among the sales departments of the various companies operating throughout the State. The attempt of the Union and Associated a short time later to restore gasoline coupon books to use created a very unsteady condition for several weeks. The Richfield, Gilmore and Ventura Oil Companies refused to adopt this system which allowed the user a reduction of 1 cent a gallon on gasoline but met the issue by announcing a general cut of 1 cent per gallon at all points. The Standard refused to change its price but did reinstate the old charge account. The result was that service stations were quoting a variety of prices and this condition existed until the distribution of coupon books ceased at which time all companies reverted back to the price maintained by the Standard. Competition continued to be very keen all during the summer and this led the Pan American to cut gasoline 2 cents per gallon on September 4, the reduction covering, however, only Southern California as the company was not at that time retailing outside of that territory. All other marketing companies met the cut, ascribed as being due to competition, but did not molest the prices prevailing in territory not served by Pan American. The reduction at this time brought the service station price down to 16½ cents per gallon in Los Angeles, including the State tax of 2 cents per gallon and this quotation remained unchanged until December 23, when all retailers returned it to that prevailing previous to September 4, that is 18½ cents per gallon, including the 2 cent State tax. While all this price cutting was going on in Los Angeles the quotation at other points on the Pacific Coast remained stationary as the mar-



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Worthington pumps of this type are designed for capacities up to 50,000 barrels per day and the same type of steel-forged construction has been used in other heavy-duty service for pressures up to 10,000-lb. per sq. in.

In addition to a full line of pipe line pumps, we make pumps of every kind and for every pumping service in the oil industry. This line includes reciprocating and centrifugal pumps, steam or power driven, in a complete line of designs.

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TRIMO CHAIN WRENCH

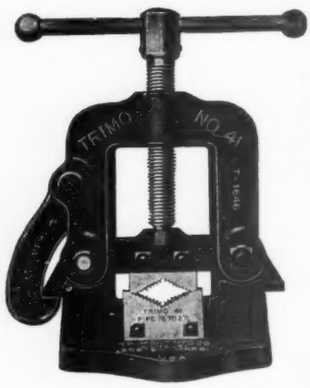
Built unusually strong. Jaws and handle are drop-forged, and handle is flat, not round, assuring added strength. Chain pocket is in handle where there is greatest strength to resist drawing stress. Eight sizes—for pipe ⅛-in. to 16-ins. The smaller sizes make excellent, handy tools for general pipe work.

TRIMO PIPE WRENCH

Jaws and handle are drop-forged of selected steel. Unbreakable pressed steel frame. Grips powerfully but releases readily. Threads of removable jaw and nut are rounded top and bottom. They will not strip or burr. Nut guards prevent loss of adjustment when working in close quarters. Insert jaw in handle and all parts are readily interchangeable. Made with wood handle in four small sizes, 6, 8, 10 and 14-ins.; in steel handles eight sizes, 6 to 48-ins. For ⅛-in. wire to 5-in. pipe.

TRIMO PIPE CUTTER

Can be used with one cutting wheel and 2 rolls or 3 cutting wheels. Two tools in one. The new TRIMO Thin Wheel of Chrome Vanadium Steel makes a quicker, cleaner cut, with less burr—comes in knife or knurled edges. There is no thread in frame or roll block to wear out. Case-hardened nut adjusts handle screw and is readily replaced when worn. Made in 3 sizes, for pipe ⅛-in. to 1¼ in., ¼ in. to 2-ins., 1 in. to 3-ins.



TRIMO PIPE VISE

Jaws are made of tempered tool steel and have fine-milled teeth which grip the pipe firmly. Yoke, frame and base are of guaranteed malleable iron. Screw, head and handle are of selected steel. Smooth hand-grip insured by ball ends of the handle which are secured by patented device. Seven sizes.

No. 400	⅛ in. to 1¼ ins.
No. 40	⅛ in. to 2 ins.
No. 41	⅛ in. to 2½ ins.
No. 42	⅛ in. to 3½ ins.
No. 43	⅛ in to 4½ ins.
No. 44	⅛ in. to 6 ins.
No. 40 B	⅛ in. to 2 ins.

No. 40 B is a portable kit vise and can be quickly clamped to bench or post without drilling of holes.

TRIMONT MFG. CO.

Roxbury, Mass.

keting companies did not feel justified in making a general reduction, inasmuch as prices have been all out of line for more than a year.

Price Fluctuations

Crude and fuel oil had its ups and downs during the year, the first price change being made on February 4, followed later by revisions on September 22, and October 27. The first schedule, that issued on February 4, applied to every field in the State, the increase at that time ranging from 25 cents per bbl. for heavy crude to 58 cents per bbl. for the highest quality crude at Rosecrans. This schedule remained in effect until September 22, at which time a new one was issued for each individual field in the State. As would naturally be expected quotations varied in each district, the cut ranging from 25 cents per bbl. in heavy crude to 8 cents in the lighter grades, the scale of course graduating with each change of one full degree. Heavy crude was hit the hardest due to the rapidly accumulating stocks of fuel oil and the enormous output of comparatively low grade oil at Inglewood. This was the first time in several years that individual schedules were posted for each field and this same procedure was followed again on October 27, at which time heavy crude was again cut, the reduction varying in each field depending upon the quality of oil produced. Wheeler Ridge, McKittrick, Kern River and Newhall were hit the hardest, a straight cut of 25 cents per bbl. being made in these areas, while the other fields were reduced around 15 cents per bbl. Coincident with this cut in crude, the Standard announced a reduction of 20 cents per bbl. in fuel oil, bringing the price in Los Angeles down to $1 per bbl. and in San Francisco to $1.12 per bbl.

Mergers and Consolidations

Several mergers and consolidations were effected during the year, the most important of which was the acquisition by the California Petroleum Corp. of the Mohawk Oil Co., Ventura Consolidated Oilfields and affiliated companies, included in which were the Ventura Refining Co., Montebello Oil Co., Oak Ridge Oil Co., Santa Paula Oil Co. and Gato Ridge Oil Co. The transaction involved an interchange of stock and brought to the California Petroleum Corp. additional production at Santa Fe Springs, Midway-Sunset and Ventura. The company also acquired a complete refinery at Fillmore and several smaller units at other points, together with a complete distributing system including wharfage facilities at San Francisco. The organization of Pan American Western and the separation of former Pan American properties in California was, of course, an outstanding feature but this was more of a reorganization than a merger. The company has made unusually good progress to date and, although the government suit, involving property in the Elk Hills Field, was lately decided adversely to the company, the Supreme Court has yet to pass on the verdict of the two lower courts. This property is naturally a valuable one but its loss cannot stop the company from becoming a big factor on the Pacific Coast. Control of the United Oil Co. passed from the hands of C. F. Whittier and J. M. Kent into those of Irving H. and Marco H. Hellman, Los Angeles bankers. The Hellman interests paid, it is reported, $50 per share for control of United, which holds the entire stock of Richfield Oil Co., the marketing agency. The Richfield-United group has a daily production of approximately 7,500 bbls. and markets 10 per cent of the total gasoline sold within the State. These companies also buy a large quantity of crude oil and some natural gas gasoline. Considerable difficulty has been experienced by the company in the past in disposing of the residuum resutilng from refinery operations but a contract recently made with the Union Pacific Railroad guarantees an adequate outlet for the next three years at a favorable price.

KANSAS' NOTABLY GOOD RECORD FOR PAST YEAR

(Continued from Page 108-D)

which was under development at that time.

The percentage of dry holes completed in the State last year ran slightly higher than previous years and the 636 dusters drilled established a figure of 31 per cent failures for Kansas. The lowest percentage of dry holes which records show for Kansas was made in 1921, when 25 per cent of the ventures were plugged as non-producers.

During 1925, there were two spots of major importance in Kansas, the Rainbow Bend Pool in Cowley County and the series of pools comprising the "Golden Lane" in Greenwood County. These two areas occupied the interest of the Kansas oil fraternity to the exclusion of almost all other regions.

The Rainbow Bend Field discovered in December, 1923, has seen its best days, and it is now on the decline. This field covers an area of approximately 700 acres and it has put almost 5,000,000 barrels of crude into the flow tanks. A wildcat venture, unpromising and given scant attention when the original well was started, the field came into prominence, when, shortly after the discovery well was completed, the Marland Oil Co. purchased a quarter interest in the properties from the Independent Oil & Gas Co. for a half million dollars.

The sand at Rainbow Bend is found at 3,400 feet and has been called the Rainbow Bend sand. It offers the possibility of correlation with the Bartlesville sand of Oklahoma, although definite correlation has not been established.

The Rainbow Bend Pool located in the bend of the Arkansas River after it is named, has been very productive, and owing to the control of producing acreage its development has been marked by careful and conservative drilling. There were no adjoining leases held by competing companies at Rainbow which necessitated immediate development, and the field is a model for economic drilling activity.

When splendid results were obtained at Rainbow, there was much effort upon the part of operators who owned leases just outside of the block to prove their holdings. These ventures were almost unanimously dry. Drilling was carried on in every direction from the field, but the good production never left the Bend. The Phillips Petroleum Co. was one of the most persistent companies to explore the regions across the river to the southeast and south and there have been a number of failures chalked up to them for their ventures.

The peak production of the Rainbow Bend Field was attained last summer when its daily average for one week rose to 22,000 bbls. The gradual decline which set in, has lowered the daily production to 5,000 bbls on February 1 of this year. There has been very little production found in that territory outside the block of leases which constituted the original "deal." This is the working of fate, for at the time the Rainbow Bend operation was started, the companies which ordinarily purchase protection acreage near wildcat wells, were out of the market, and steadily refused to invest in leases near the project. This resulted in the Independent Oil & Gas Co. (which originally financed the venture) having the entire block of leases on its hands. The close ownership of Rainbow Bend leases is more accidental than intentional.

Golden Lane Development

The "Golden Lane" as the narrow productive strip of land running northeast and southwest through the northwestern section of Greenwood County is called, is one of the most interesting operations in the Mid-Continent Field. It can hardly be termed a pool, as it is a succession of small pools, several of which have been joined by drilling campaigns, and many others have been cut off by failures in intervening territory. The Golden Lane furnishes more production per day than any other region in Kan-

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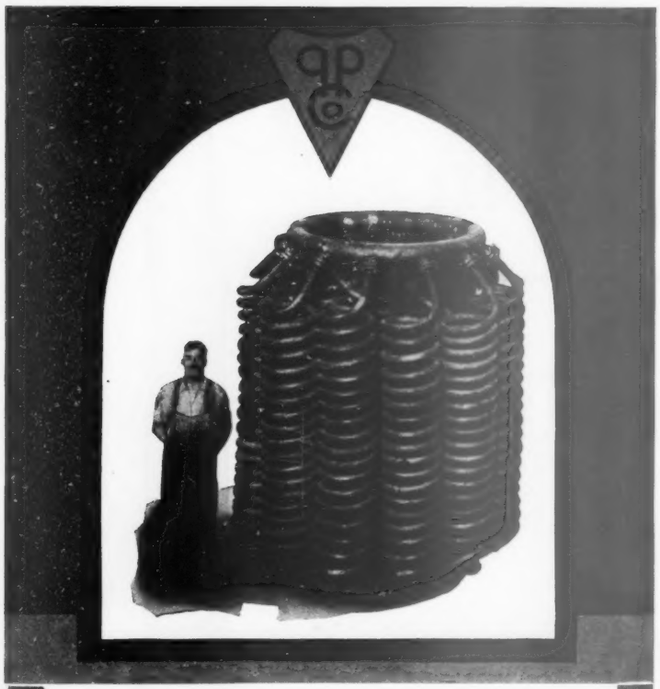

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sas, and its steady progress has been one of the contributing causes which made the daily average of Kansas production exceed the 100,000 bbl. mark.

The Golden Lane is producing from the Bartlesville sand, and as usual in this formation, the shot makes the well. Many of the wells have been shot into splendid producers when only a few hundred feet of oil was standing in the hole.

The Russell Pool in Russell County Kansas offers an opportunity for study. The peculiarities of the producing formation in this field have gained for it widespread attention and interest. The oil in this field is found in "bedding planes" in the lime, and when penetrated a foot too far, the well is ruined. Three separate and distinct horizons of planes or "breaks" have been revealed in drilling this field, and all three of them have been productive. The daily yield of the Russell Field at present is 5,000 bbls. Its growth has been slow, and while the wells do not have initial production which places them in the gusher class, their staying qualities are good and the decline is gentle.

In the second year of its life, the Russell Field was extended to the northwest by a well of the Derby Oil Co. The field was discovered in Section 8-12-15w by the M. M. Valerius Oil & Gas Co. a subsidiary corporation of the H. F. Wilcox Oil & Gas Co. The original well proved to be on the extreme east edge of the production, and wells drilled to the east of it have failed to find oil. The field runs almost north and south, and the chief interest at present is in the north extension. There is a vast territory in this direction which has nothing to condemn its prospects, and the well completed in Section 32-11-15w, has already given much impetus to a fresh drilling campaign which may place Russell in the major pools.

Production 38,151,622 Bbls.

The crude oil production of Kansas in 1925, 38,151,622 bbls. was exceeded only once in the oil history of the State. In 1918, Kansas produced 43,253,470 bbls. This was in the heydey of the Towanda Pool on the west side of the El Dorado Field in Butler County. The Towanda Pool was opened by the Trapshooters' Oil Co. in the late spring of 1917, with a well which was variously estimated from 12,000 bbls. up to 20,000 bbls. and the development that followed resulted in a production in 1917 of 37,986,669 bbls., the greater part of which came in the last half of the year. In 1916 the State produced 13,042,800 bbls. Following the peak in 1918 production dropped sharply, with occasional upward movements as new pools in northwestern Butler County, Marion County and Greenwood County came in, but in 1924, the production had fallen to 29,671,551 bbls., or the lowest since 1916, and a daily average of 81,070 bbls. for the year. Last year the influence of new pools in Cowley County, and of the Russell County Field, were in the main responsible for an increase of 8,480,071 bbls. over the production of 1924.

Production by Years

The annual production of several of the most important producing counties of the State is given below:

Marion County

	Bbls.
1925	1,661,510
1924	2,333,176
1923	3,266,396
1922	5,636,647
*1921	7,983,494
*1920	8,932,929

Butler County

1925	9,659,398
1924	10,821,699
1923	14,221,115
1922	17,733,299
1921	15,013,977
1920	18,423,716
†1919	24,060,408
†1918	36,069,670
1917	31,269,169

Greenwood County

1925	13,464,805
1924	9,469,932
1923	6,938,702
1922	3,376,575

Greenwood County was not carried separately previous to 1922.

Cowley County

1925	7,038,874
1924	2,266,340

Other Counties

1925	6,327,035
1924	6,809,825
1923	5,385,310
1922	5,641,125
1921	7,983,494
1920	8,089,782
1919	5,623,564
1918	7,183,800
1917	6,717,500

*Includes Elbing Field in Butler County.
†Includes Marion County.

Pool Records in 1925

The Seeley Pool in Greenwood County increased from 1,914,610 bbls. in 1924 to 2,877,527 bbls. in 1925. The Teeter Pool in 1924 made 644,817 bbls. but the extension of the pool both to the northeast and the southwest increased its output to 4,574,865 bbls. in 1925. In Cowley County, the Rainbow Bend Pool which was opened in the late summer of 1924, and which made 861,344 bbls. between that and the close of the year was good for 3,949,396 bbls. last year. The Slick-Graham pools, also late 1924 discoveries, produced 69,192 bbls. that year, but last year made 1,464,219 bbls. The Russell Pool, in Russell County increased from 232,266 bbls. in 1924 to 1,336,148 bbls. last year.

The summary of operations in Kansas for the years follows, giving the number of wells completed, the total initial production, the number of dry holes and gas wells in each county.

Kansas

Summary of work completed in 1925:

County	Comp.	Prod.	Dry	Gas
Allen	17	169	4	4
Anderson	251	14,475	27	3
Butler	152	6,358	70	2
Bourbon	16	.....	11	5
Elk-Chautauqua	200	6,143	65	34
Cowley	301	86,907	88	4
Greenwood	672	75,461	165	4
Montgomery	78	1,900	42	15
Neosho	28	132	11	4
Wilson	27	4	20	5
Russell	61	11,474	10	1
Sumner	26	397	20	2
Labette	4	258	1	0
Marion	17	710	9	1
Mitchell	2	0	2	0
Reno	3	0	3	0
Harvey	7	25	6	0
Woodson	49	707	22	1
Coffey	13	375	6	0
Ellis	2	0	2	0
McPherson	2	0	2	0
Lincoln	3	0	3	0
Sedgwick	8	0	8	0
Lyon	23	815	12	0
Chase	14	1,205	6	0
Miami	4	5	3	0
Franklin	4	5	3	0
Riley	2	0	2	0
Kingman	2	0	2	0
Barber	1	0	1	0
Finney	1	0	1	0
Trego	2	0	2	0
Seward	2	0	1	1
Barton	1	0	1	0
Decatur	1	0	1	0
Linn	2	145	0	0
Hamilton	1	0	1	0
Clay	1	0	1	0
Phillips	1	0	1	0
Rooks	1	0	1	0
Rice	1	210	0	0
Totals	2,003	207,880	636	86

Summary by months:

January	64	7,362	31	8
February	96	10,402	25	8
March	107	11,094	39	3
April	259	18,861	83	18
May	187	38,937	53	5
June	151	21,091	55	3
July	255	25,919	70	6
August	213	16,680	77	5
September	192	19,377	58	4
October	182	16,084	56	8
November	192	14,114	54	11
December	105	7,959	35	7
Total 1925.	2,003	207,880	636	86
Total 1924	1,125	92,268	396	79
	878	115,612	240	7

Year	Comp.	Prod.	Dry	Gas
1921	1,380	95,789	353	118
1922	1,640	74,391	497	86
1923	1,405	61,372	535	63
1924	1,125	92,668	396	79

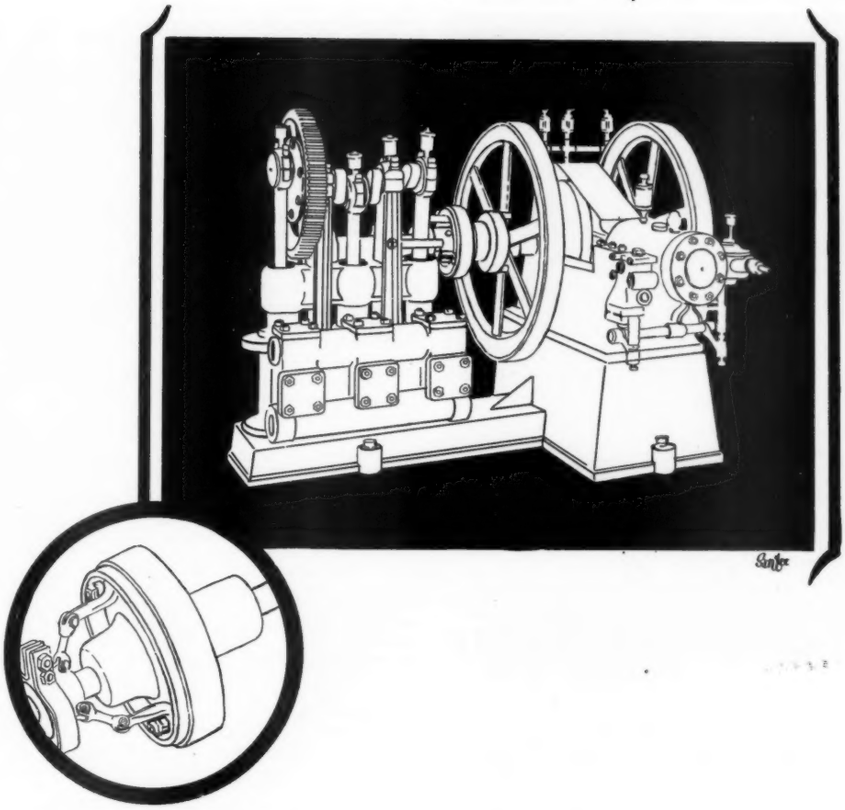
CENTURIES OF SUPPLY; RESTRICTIONS BOOST COST

(Continued from Page 78)

Overproduction is the only protection the public has against higher prices.

Essential users must not think they can cheapen prices by limiting the use of gasoline or oil to essential purposes. Prohibiting consumption of that part of a barrel of crude oil which now sells in competition with coal would necessitate its storage by the industry and would add to the cost of the lighter fractions in consequence.

An abundance of gasoline at low prices is one of the greatest necessities of American life, and if it is borne in mind what cheap gasoline has done for the American people, it will cause your board to consider seriously the advisability of recommending any change in our present



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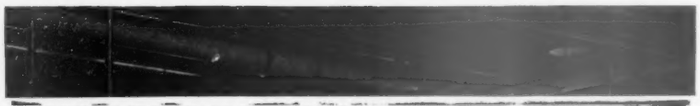
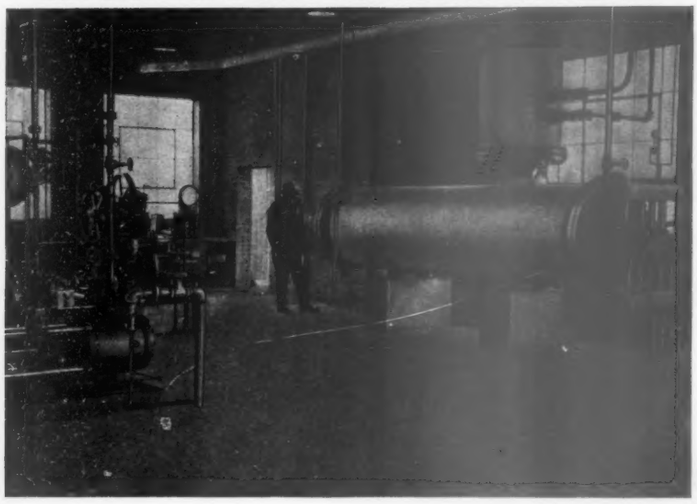


IN AN OKLAHOMA REFINERY



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Carbondale Refrigerating Machinery is selected by those who measure economy by results. This is why it is selected by practically every refinery whose name carries weight. Cost of production, instead of cost of equipment forms their basis for selection.

For a third of a century, we have been solving the refrigerating problems of refiners—ample proof that we can approach every problem from the right angle.

THE CARBONDALE MACHINE COMPANY
Carbondale, Pa.

Carbondale Refrigerating Machinery *for* Refiners

methods of business which might cause an increase in price.

It is in my mind that cheap gasoline is one of the greatest, if not the greatest, educational influence in American life today.

Cheap gasoline has made it possible for every American man, woman and child to know their country, to know its resources and know its beauties. It has permitted the man from Portland, Maine, to visit the man in Portland, Ore., in his own vehicle and to take his wife and his children along on the visit. It has permitted them to learn the vast resources, the wealth, the importance of their country.

No other nationals in the world know their country as our American people know ours,—thanks to the cheap "flivver" and the still cheaper gasoline.

Last week, while I was driving through the oil fields of California, I saw hundreds of cars, mostly from our northern States, containing whole families who had fled from the northern snows and who were gaining health in the sunshine of that climate.

Last summer there were literally thousands of cars driven by their owners, accompanied by their families, from the Atlantic Ocean to the Pacific and back, and almost as many thousands were driven from the Pacific Ocean to the Atlantic and back.

Epochal Fraternization

Possibly these people visited friends. Certainly they made friends on the other coast. They got to know their countrymen and their problems,—agricultural and commercial. They exchanged views with one another,—upon all manner of subjects, religion, politics, business and the relationship of one to the other.

It is interesting to reflect on what summer touring is doing for our American civilization.

Something is happening of such a stupendous nature that it might well be called epochal.

The business men of the East, when they have a holiday, board a ship and visit Europe.

Millions upon millions of our American people, in their holiday time, are returning to an almost nomadic manner of life. Driving in their flivver, with their tent and ax, their sack of flour and side of backon, their fishing rod and frying pan, they are in this day of the enervating influence of steam heat and kindred comforts, returning to the hardy manner of life of their pioneer ancestors, gaining health and knowledge and love of country, such as no man ever gains confined with city walls.

Nor are the city people, who can not enjoy these long holidays, deprived entirely of the benefits of cheap gasoline. Millions of our tired workers and their families get into the country on holidays and Sundays.

Who can say that this joy-riding is a non-essential use of gasoline? It has made our America the most comfortable and pleasant place of all the world for man to live in.

America has been called the great melting pot of humanity.

Cheap gasoline is keeping that pot boiling.

Restricted production of petroleum in the interest of conservation, means the end of cheap gasoline.

No Fear of Shortage

After spending my whole life in the oil business and having given it most thoughtful consideration from every practical and scientific angle, it is my belief that there is no reason to talk of restricting production.

It is my firm conviction that the public of the United States has less reason to fear a shortage of petroleum for its essential uses than the petroleum industry has reason to fear, that, because of inventions, discoveries and chaging conditions, there will be left on its hands an enormous supply of oil for which there will be little demand.

There is as much reason to fear a shortage of the food supply of the United States, or of the cotton supply for future generations as there is to fear a shortage of necessary oil. The supply of oil this year, or next year, or for the next 10 years is more certain, than is the supply of cotton, unless we find some way to destroy the boll weevil. It is more certain that the supply of wheat, unless we can get rid of the chinch bug. It is more certain than the supply of corn, unless we can get more rain at the right time in the corn belts.

We have 10 years' supply of oil available in our tanks and in our proven fields at a cost that can now be determined, assuming only that labor and material costs remain the same. No pest can keep that supply from meeting the demands of the people of the United States at a reasonable cost, except the pest of the pseudo-scientist, who continues to agitate the public mind with groundless fears of an early exhaustion of our oil.

What other industry can say that it has a 10 years' supply of its products necessary to meet demand at any cost? The farmer can not guarantee you an ample supply of wheat, or corn, or beef, or cotton for any one of the next 10 years at any price he can now determine.

Industry Meets All Demands

Let us see how the petroleum industry has met the demands made upon it in the past:

In 1875 we produced 8,000,000 barrels of oil; in 1895 we produced 50,000,000 barrels of oil; in 1915 we produced 280,000,000 barrels of oil; in 1925 we produced 750,000,000 barrels of oil.

Our rate of production has increased 300 per cent every 10 years. And we have in our tanks today above ground, over 500,000,000 barrels of petroleum and its products.

Another way to put it. During this 50-year period, supply has exceeded demand by 500,000,000 bbls, and today our current supply is so far beyond the current demand for essential purposes, that the industry is forced to market in excess of 300,000 bbls. of its products daily in competition with coal.

There will come a time when current supply does not meet current demand. When that time comes, it should occasion the public no alarm. It will probably be of short duration. Underproduction will bring us high prices and high prices will again bring us overproduction.

It is to be expected that the first half of 1926 will show current supply of crude oil less than current demand, and competitive bidding for this reduced supply will cause higher prices. The public should keep in mind, however, that this will not mean an under-supply of oil for its essential uses, but only an under-supply of oil for the non-essential channels into which it has been going.

The law of Supply and Demand, operating through its price factor, will again result in an overproduction of oil and will reduce prices for essential uses.

Overproduction is a condition the public should never worry about, though the industry may. It is truly the best, if not the only, protection the public has against higher prices, and I am not sure that overproduction is an unmixed evil for the industry. It will eventually lower the costs of production.

Regarding the future supply of oil, my answer to those who fear the early exhaustion of our petroleum supply is that there is a visible, measurable supply of petroleum, available to the people of the United States at determinate cost, sufficient to meet the demand for internal combustion fuel and lubrication for centuries to come, probably as long as our civilization and its necessities for petroleum shall exist.

FEAR FROM COMPETITION MORE THAN EXHAUSTION

(Continued from Page 80)

viewpoint of the scientist, best able to forecast the future.

Competition of Substitutes

Today we are producing about 2,000,000 bbls. of crude oil daily and with the present scientific methods of determining

FRICK-REID SUPPLY COMPANY

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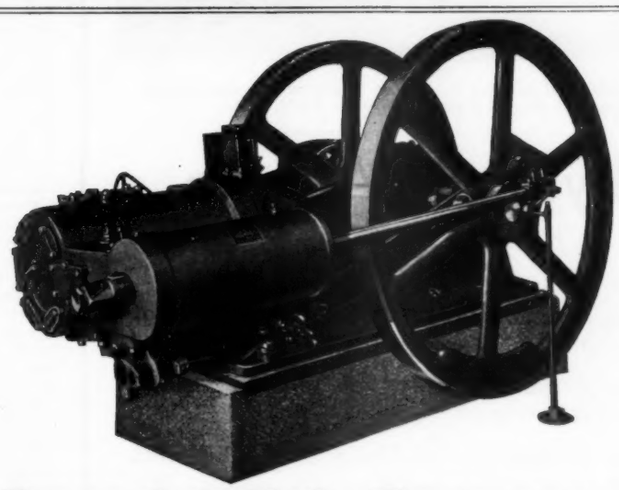

Speed With Economy

AS Individuals, as Cities, and as Nations, we strive constantly to save time. Speed is always possible, but not always speed with economy.

A drilling engine must be a fast engine to be successful. In Ohio a Reid Drilling Engine pulled the bailer from a depth of over 2500 feet in three minutes and 25 seconds. The same engine pulled a heavy string of tools in eight minutes and 15 seconds. Reid Engines everywhere are showing similar speed.

You might think such speed would make for fuel extravagance. But not so. Reid Engines have been known to pay for themselves in fuel economy on one well.

Their response to the speed wheel is instant, cat-like. Yet they produce a steady motion on the beam. Powerful, flexible, reliable.

Detailed information about Reid Gas and Oil Drilling Engines may be had at the Frick-Reid Store in your field, or direct from our Tulsa office. Ask for bulletin No. 28.

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All parts are rust-proof.

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THE COMPASS OF INDUSTRY

possible producing areas, the future production of crude oil appears to be largely limited by its cost of production and by a cost that will permit its delivery to the public in competition with known substitutes that have been developed, and are being developed, which will take the place of petroleum oil products when their costs of production and manufacture are sufficient to permit this competition.

Deeper drilling, more intensive recovery, and the exploration of the vast unexplored areas, where the formation of the oil producing variety are known to exist, would seem to make these results reasonably certain, as to a continuation of our oil supply. The facts disclosed by the past all point to this result.

The oil industry has always responded to the demand in supplying the public with its requirements, not only in quantity, but in the particular product required. It has done this as efficiently as any other industry, and at prices relatively less than that of any other great industry. It has done this even in the face of continued predictions of the experts, that each time we had reached the maximum of our production, and that the future had little to promise for the continuance of a sufficient supply.

Cracking processes are being perfected and put into use as fast as practical conditions, the supply of crude and the market for its products demand and justify. There will be a much larger recovery of gasoline when these conditions permit.

Deeper drilling has revealed what amounts to new fields of production, even in the areas already drilled and considered once as exhausted. It is well known among the experienced oil producers that these deeper sands are more productive and that, also, they contain a higher grade of oil.

New methods of drilling, of oil-bearing conditions have added to our assurance of an ample supply not only of these deeper areas, but made possible vast new areas of production which are as yet practically unexplored.

Only Begun to Produce Oil

Where in 1890, in 1900, and in 1909, it was thought that we had probably developed most of the areas possible for oil production in this country, it now seems as though we might have only commenced to produce oil.

There remains to be explored for oil, many times more acreage than has yet been developed. The possibilities of production from deep drilling on the present developed acreage and in the new undeveloped areas, increase this prospect to a great extent.

It is never safe to predict as to the future of oil production. It is an industry definitely based on "finding," without any certain knowledge until found that oil exists. It is also as true, that within certain areas, and this includes more than one-half of the entire area of the United States, there may be found oil pools, and until this vast area has been fully explored it is just as unsafe to say that oil may not be found as it was to make the prediction referred to.

The precedent and experience of the industry is entirely in favor of the opinion that sufficient oil will be found, rather than that it will not be.

Waste

The oil industry, like any other, has had continuous progressive development. This is true with relation to its production methods, its transportation and its refining and marketing.

It is an industry dealing with a volatile product, and one susceptible to losses. Since the beginning there have been wastes in the production and manufacture of oil. This has been in an ever decreasing degree, and today, except in the districts where these economies are impracticable, there is but little loss, either in the production of oil, or in its handling thereafter. These economies are the result of better methods, and better markets for all the products. They are now a financial necessity to any operator in order to get his profit required to meet competition. Many of these economies were unknown a few years ago, or were impossible because of the lack of discoveries and inventions at that time, but which now make the present conservation possible.

The development of any industry must necessarily be had under conditions, and in view of the circumstances at the time existing. Their development, and the knowledge that comes with the development, together with the growing uses of their products for which there had been no previous demand, all bring about stricter economies and better practices.

The public derives the benefit of all this economy, and in the case of the oil industry, without increasing cost to it. Oil products are cheaper now than prior to the World War, (1913).

Fuel Oil Disposal

In its operation the oil industry has had to sell part of its products for what has been called inferior purposes, and to a certain extent continues to do so, in the case of fuel oil. This is and has always been a necessary practice, and I believe furnishes a useful and practical outlet for products, required to make the business sufficiently elastic to meet the requirements of the public. In many instances fuel oil is a public necessity, such as in California, and in many of the interior States. In other sections its sale is required to enable the operation of the refineries, where the requirements for other products are large, and which must be sold at a price that does not permit the cracking of all the products going into fuel oil. Fuel oil furnishes an elasticity to the oil industry, and when the occasion demands, temporarily or otherwise, this product can be converted into gasoline.

Another protection the public enjoys for its future oil requirements is the enormous supplies of substitutes which can be obtained from shale, from coal, and from other sources that will do the same service, when and if the crude oil supply fails, wholly or in part. These sources are known, and are only awaiting development because of the abundance of supplies of crude oil, which, because of their cheapness, do not stimulate the development of these substitutes.

A still further protection to the public lies in the development of the savings in the use of oil products. The automotive engine manufactures advise us that they can perform the same service by making engines that will do the same work on one-half the present gasoline requirements, and that probably this saving can be much further increased. This can only be done when the public wants to use this character of engine. At the present price of gasoline there is no such demand.

Governmental Requirements

As to the industry's relation to the Government in supplying the necessary emergency needs of the Government for oil in time of war. It is hardly conceivable any emergency should arise that will call for a greater reserve than is normally held by the industry. Also if, and when such emergency should arise, there is the known production which today amounts to about 750,000,000 bbls. per year, the uses of which can be curtailed to such a degree as may be necessary to meet the emergency requirements of the Government.

If this assurance is not sufficient for the protection of the Government it could, and from an economical view might well build up its own reserve, of storage stocks for emergency demands, by buying oil at the proper times. In this manner the Government could save money on its purchases and could create a reserve of stocks of, say 100,000,000 bbls. These would not necessarily have to be located at any particular point, as methods of transportation, or exchange could easily be worked out.

The oil industry, in the opinion of many, has more to fear for the future from competition, either by products from substitutes, or by the use of other sources of power not yet developed, than it has from the exhaustion of oil supply.

OKLAHOMA HAD GREAT PRODUCING YEAR IN 1925

(Continued from Page 108-B)

site boom. There were 20 wells drilled on town lots and one out of their number produced oil, the others are plugged and abandoned.

The Comar Oil Co. controlled the leases upon the structure in this operation, and slow drilling was the order of the field. The Wentz Oil Corp. owned one well which produced for a short time, and the Braman townsite boom is now history.

The north extension of the Tonkawa Field is the result of the drilling by Louis Freedman of Tulsa of a well which might be termed wildcat. This test established the location of a good body of sand, but never ranked very high as a producer. It found the Wilcox sand at 4,200 feet and at the time of discovery it was three-quarters of a mile northwest of production. The completion of a good well on the north edge of the pool gave impetus to a campaign which resulted in drilling the intervening locations. The result of this drilling raised the yield of the field and also discovered the northwest edge of the deep sand production.

Davenport an Important Find

The Davenport Field in Lincoln County is an interesting area. It is one of the best fields in the Mid-Continent, and presents ideal operation conditions. With a heavy body of sand (90 feet) and a high gravity oil, the output of Davenport is much sought by the purchasing companies, and in the fall of the year commanded a premium reported to be 35 cents a bbl. If less spectacular than some other pools in the State, the Davenport Field is durable, and the decline of the wells is slow. There has never been a barrel of oil produced at Davenport of less than 44 degrees gravity and the average gravity of the field is 47 degrees. It was producing 20,100 bbls. on Feburary 1, and during the preceding month its daily gauge had dropped to 19,400 bbls. Its peak daily production was 23,000 bbls. reached in December. While the field has not been entirely cut off from extension, it is generally believed that its peak has passed.

Cromwell Badly Handled

The great Cromwell Field on the border between Okfuskee and Seminole Counties presents one of the greatest economic crimes ever perpetrated in the oil business. This phase of the field will be dealt with at a later date. The Cromwell Field has produced a wealth of oil and made very little money for those who developed it. On February 1 it was producing 19,400 bbls. from 438 wells.

During the summer of last year the area of the Cromwell Field was amplified by drilling in the northeast end of the pool. Wells completed in that sector were good producers, and the waning prominence was restored, until the limits of production were found. During 1925, the average production of this field was approximately 35,000 bbls., declining in the fall, and reaching a figure of 19,000 bbls. on February 1 of this year. In spite of the good body of producing strata, the ultimate yield per acre of the Cromwell Field will not be very high, and this prompts the question if a thin body of good sand is not preferable as a producing horizon to a thick body of "limey" or mixed sand such as was discovered at Cromwell.

Deep Rock Pool

The Deep Rock Pool in Payne County is a small Wilcox sand operation discovered last year. It has 15 wells producing with a daily output of 1,500 bbls. daily. The depth of the pay (4,100 feet) is responsible for the caution displayed in developing this field. It may enter the ranks of major fields during the current year. The Bartlesville sand lies at 3,800 feet and the Wilcox at 4,100 feet.

The Riverland Pool, in Section 34-19-11, Tulsa County, is another "Wilcox pimple" which was found last year. Highly productive but with a pitifully limited area, this operation had about three wells which made the bulk of production. It never produced more than 3,000 bbls.

The summary of operations for last year and a comparison of totals for the past five years follow:

OKLAHOMA
Summary of Work Completed in 1925

County—	Comp.	Prod.	Dry	Gas
Osage	843	88,738	197	54
Tulsa	328	11,756	123	34
Okmulgee	542	44,806	198	48
Seminole	374	133,081	81	7
Okfuskee, Hughes and McIntosh	537	118,280	175	57
Muskogee and Wagoner	175	899	106	27
Creek	508	39,033	169	56
Pawnee	179	19,272	63	10
Kay	246	139,761	64	30
Payne & Lincln	181	50,075	37	19
Garfield & Noble	235	201,893	46	10
Carter	223	16,409	57	9
Stephens-Cotton	231	5,743	86	44
Washita	4	85	2	0
Garvin	34	1,330	10	1
Caddo	8	235	1	0
Jefferson	43	6,787	16	2
Pontotoc	24	140	16	3
Kingfisher	3	0	3	0
Marshall	8	49	6	0
Mayes	4	0	3	1
Grant	10	50	4	4
Pottawatomie	5	30	4	0
Grady	54	125	12	39
Comanche	11	213	3	1
Greer	4	0	4	0
Tillman	9	0	9	0
Washington	50	227	19	6
Nowata	27	109	9	5
Rogers	31	342	11	2
Beckham	6	0	5	1
Ellis	3	0	3	0
Blaine	1	0	1	0
Woodward	1	0	1	0
Logan	5	0	5	0
Beaver	1	0	1	0
Kiowa	5	10	4	0
Oklahoma	1	0	1	0
Johnson	2	0	2	0
Custer	1	0	1	0
Le Flore	2	0	2	0
Haskell	3	0	3	0
Murray	1	0	1	0
Alfalfa	2	0	2	0
Sequoyah	1	0	0	1
Major	1	0	1	0
Atoka	2	0	2	0
Woods	1	0	1	0
Love	2	0	2	0
Pittsburg	3	0	3	0
Bryan	1	0	1	0
Dewey	1	0	1	0
Jackson	1	0	1	0
Totals	4,978	879,558	1,578	471

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	236	64,657	73	27
February	323	80,541	107	39
March	422	73,587	131	50
April	447	89,855	114	42
May	544	73,738	156	40
June	464	75,671	140	30
July	540	67,940	152	40
August	451	41,993	176	39
September	393	91,180	113	32
October	433	69,664	142	46
November	345	81,874	134	33
December	380	68,858	140	53
Totals, 1925	4,978	879,558	1,578	471
Totals, 1924	4,814	1,211,446	1,308	468
Difference	164	668,112	270	3

Year—	Comp.	Prod.	Dry	Gas
2921	5,715	589,298	1,507	670
1922	6,148	1,190,165	1,428	571
1923	5,883	1,277,936	1,731	587
1924	4,814	1,211,446	1,308	468

JOHN D. ROCKEFELLER EXPLAINS HIS SUCCESS

A particularly readable chapter in "My Life and Memories" by the late J. I. C. Clarke, is that on John D. Rockefeller. Mr. Clarke was the first press representative of the Standard Oil. Mr. Clarke reports the explanation Mr. Rockefeller gave of his personal success in Standard Oil:

He flashed a quick glance at me, his eyes first closing to piercing points under a clouded brow. All his armor was on in an instant. He gazed long into my eyes, and gradually his eyes widened, and a look I had never seen upon his face illuminated it as he said with intense conviction, "Faith!"

"Faith in oil?" I said, echoing his tone. "Faith in the future of oil," he amplified. "I first had it. * * *" He continued.

"Henry Rogers, he never sold a share; John D. Archbold, he was always ready to buy. Back in the 80s I wanted to build a house in New York, and he bought 1,000 shares from me at $75! E. T. Bedford, when Ohio Lima Oil came in and outstunk all who tried to refine it, kept on buying until we thought he was crazy, building tanks until he had $24,000,000 locked up in it. 'Some American genius,' he would say, 'will refine the sulphur out of it, and then—'. And a genius did, and the profit was colossal. Oil for Europe, oil for Asia, oil for Africa and Australia. Faith!" Andrews, the man whose skill first made success possible, had early lost his faith—and sold out. Who bought it?—John D.

GARLOCK
TRADE MARK

WHY THE TRADE-MARK

A Trade-Mark is the symbol showing the origin or source of the article to which it is affixed. It is also a guarantee to the purchaser of the manufacturing skill of the owner, the quality of the goods and the correctness of the weight and size of the article.

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EVANSteel electric core ovens give uniform drying of cores. Imperfect cores cause many casting defects—especially in valves and fittings where cores must be large. The electric oven, far more than the gas or oil oven, gives an even temperature, and eliminates the human factor.

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EVANSteel Electric Furnace CASTINGS

SAYS LAW ON OIL IS PREMIUM ON WASTE

(Continued from Page 78)

impel wasteful exploration of that which is developed.

Estimating Reserves

Speaking first of reserves. The known already definitely located supply of petroleum in the United States to be produced under present methods stated in terms of 1925 consumption, is variously estimated in amounts ranging from the equivalent of 3 years to the equivalent of 7½ years' supply. I am disposed to favor the lesser estimate. Beyond this equivalent of 3 to 7½ years' supply we are dependent upon new discoveries, imports from foreign countries, and substitute methods and products.

Regarding new discoveries, the man who positively states they will decline to the danger point in 5 years or 10 years or 20 or even 40 years is obviously making an assertion on a matter on which he is in no position to do other than prophesy. On the other hand, that man who positively states new discoveries will not decline to the danger point in 5 years or 10 years, or 20 or even 40 years is to a like degree prophesying and the two prophesies the latter is the more dangerous. The nation will not be seriously damaged if it underestimates its supply but it can be seriously endangered through an overestimate and overconfidence. Both these prophets are guessing. No man can tell with certainty and therein the danger lies. We can, however, know positively and state as a fact that no man knows how much or how little oil beyond the equivalent to a 3 to 7½-year supply exists in the United States extractable under present methods. We know also how rapid could be the decline in our daily supply if new discoveries were to become infrequent.

To illustrate, on May 30, 1925, the daily oil production of the United States was 2,348,000 bbls. Today it is 1,916,000 bbls. Thus over a period of 8 months there was a steady decline amounting to 432,000 bbls. or at the annual rate of 27.6 per cent. During that period of 8 months the oil companies were not inactive in their attempts to make new discoveries. On the contrary they were active and vigilant—but not to the same degree they will become should this rate of decline continue for another 8 months or more. Thus a 27.6 per cent rate of decline took place notwithstanding much drilling continued and considerable new production was developed to offset the decline in the older wells. With higher prices the search would be more intense but it does not follow that the search would be more successful in proportion to its intensity.

No Early Shortage

That there might be no misunderstanding let me hasten to say I do not anticipate the present decline forecasts an early shortage. On the contrary I believe it to be only one of those lulls between overproduction and expect we shall have many more overproductions before the permanent decline begins. But notwithstanding this expectation we have no certain knowledge there shall be another one.

Since we realize how rapid the decline can be, and also that we can never determine which is to be the permanent decline until frantic efforts to find new pools will have failed and the shortage is discovered by its presence, it is quite clear it would not be the part of wisdom for the nation to continue its present system of strenuously depleting each pool immediately upon discovery and yet delay preparations for providing adequate substitutes until the shortage is known to be upon us. Because years will then be required to develop that for which only months can be spared. If, however, the industry were able to overcome the competitive drainage difficulty the known unmined reserves would perhaps be gradually built up until the danger I have described would not exist. In that event production from known reserves could be speeded up to meet a threatened danger. Under present competitive drainage conditions production from known reserves is on the contrary always kept speeded up to the maximum practical limit. This occurs even during times of great overproduction. So much for the known supply. The nation is incurring inexcusable risks unless it either makes possible the building up of known unmined reserves, or on the other hand develops substitutes much beyond the present experimental points so that they can immediately assume the burden when called upon.

Recovery of Oil

The practices growing out of this 1875 principle serve to promote waste in the petroleum industry as follows: In the first place oil and gas are usually found more or less associated together confined in porous sandstones or limestones under enormous pressures ranging from 200 to 1,500 pounds per square inch, proportioned usually upon depth. If the reservoir rock be sand the spaces occupied by the oil and gas are minute interstices between the grains, usually so small as to be incapable of perception by the naked eye, and yet which may range from nearly zero up to 35 per cent of the total bulk.

It is now rather general'y accepted if the pore space of the sandstone containing oil is not greater than 10 per cent it will not give up oil under present methods with sufficient rapidity to be rated commercially productive. Porosity in excess of the percentage named is assumed to give up oil readily. But even under these conditions it is now thought that, due to viscosity and surface tension, perhaps 75 to 85 per cent of the oil originally in the sand is not extracted under present methods. This 10, 15, or 20 per cent that is recovered, however, has, due to this pressure, a tendency to flow out very rapidly and is soon depleted. Wells come in large and decline rapidly, usually producing more than one-half their total output during their first year with the other half extending over a period of many years. More than one-half the present daily production comes from less than 5 per cent of the producing wells. He who secures its flush production is considered to have the "cream" of any pool.

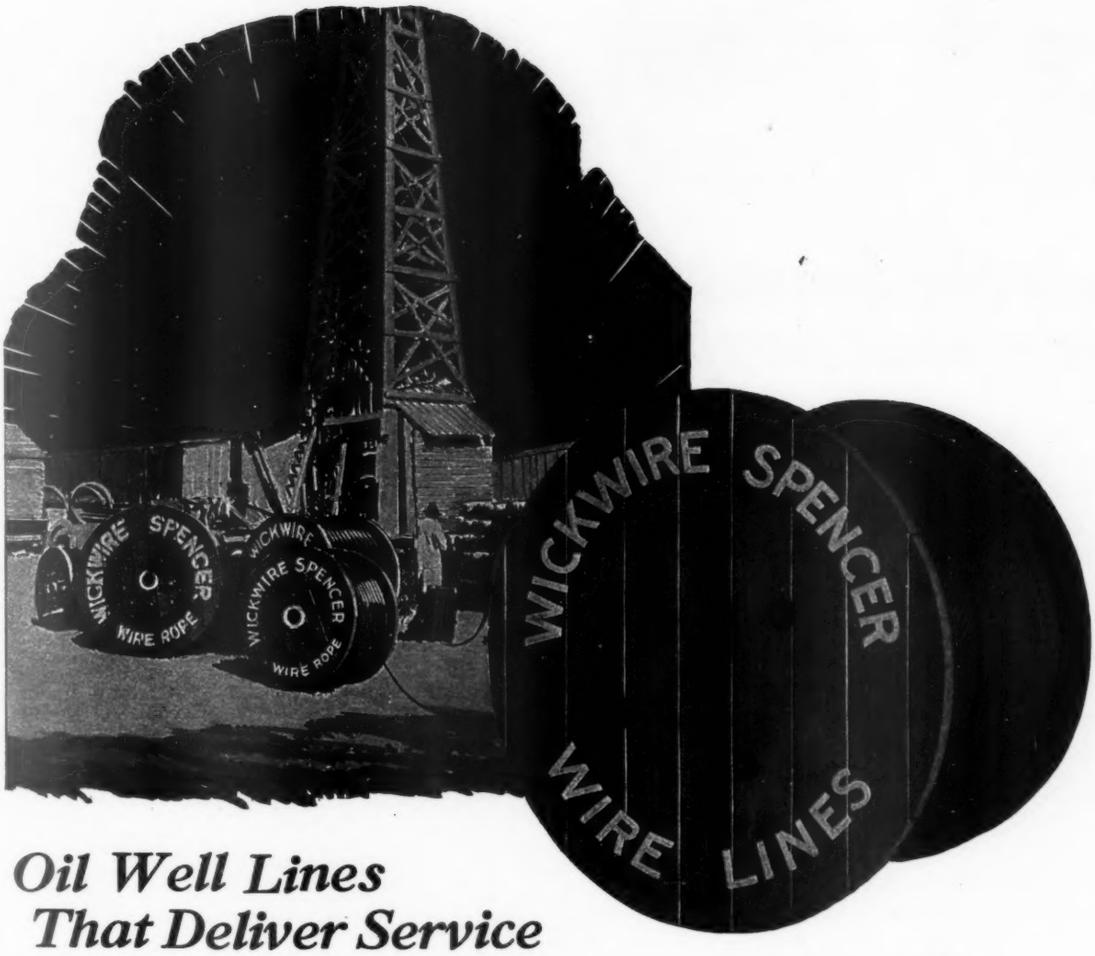
Rush After Discovery

This fact has become so generally accepted in the industry that in any region where lands are badly cut up, when a discovery is made many nearby tests are immediately started although those who start them have no knowledge whether this particular discovery may be a flash in the pan or a prolific field; whether it may cover only a few acres or many miles. Some typical illustrations of this are the Garber and Thomas Deep Sand Pools recently opened in Northern Oklahoma. During the first week in April a 2,800-bbl. well was discovered at a depth of 4,380 feet in the Garber Pool of Oklahoma. Such wells cost approximately $75,000. The land is held in 160-acre tracts. Notwithstanding these fairly good size tracts and that the importance of the discovery was yet unknown, 36 additional tests were started at once, representing a total cost of $2,500,000. A like occurrence took place in the Thomas Pool, 18 miles northeast of the Garber Field. On May 9, a 4,000-bbl. well was completed at a depth of 3,955 feet. Before a second well was completed 27 tests had been started. Most of them were either dry or so small as to be noncommercially productive. This character of development is not peculiar to Northern Oklahoma but is characteristic of methods wherever competitive drainage exists.

Competitive Drainage

I have here a chart showing five well-known pools of the Mid-Continent Field drilled within the past several years. Three of these pools were drilled under the competitive drainage system, that is, each pool was covered by numerous blocks of acreage under different ownership without any cooperative agreement affecting rate or manner of development.

(Continued on Page 178)



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MERGERS OF PAST YEAR SHOW TREND IS TOWARD INTEGRATED COMPANIES

By Neil Williams

The past year marked another milestone in the approach of the day when producing, refining and marketing of oil will be an industry only for the fittest and for the company with the largest and most efficient means and resources. The curtain rapidly is being dropped on the smaller company with limited capital.

That control of the oil industry is gradually being centralized was clearly reflected during 1925 in the continual merging of companies, purchases of one company by another, or by other consolidations and combinations. The tendency, which has been apparent for several years, was more strongly noticeable the past year than at any other time in the history of the year.

The year witnessed the consummation of unions and purchases which will have important and direct influence and vital effect on operations in all phases of the oil industry, not only in the near future but also in years to come. From the smallest to some of the country's largest and soundest companies and corporations were involved in these transactions.

This last statement was an indication that all the mergers the past year were not entirely forced because of stringent financial necessities of some of the individual companies now but showed that the "big fellows" realize that the time is not far distant when the utmost economical operations must be practiced and that more and more money is to be required to carry on the work. This can only be accompanied by elimination of duplicated efforts and consolidated, efficient management with large capital.

More Mergers Coming?

Not only was 1925 a year of mergers but judging from unions the first two months of this year it is apparent that 1926 is to see even greater developments in the centralization of the oil industry. Already, several large consolidations have been effected and rumors are that combinations hardly thought of now are to be perfected.

While mergers during 1925 were for sundry reasons, including financial needs, elimination of competition and survival of the fittest, outstanding was the great expansion movement of individual companies. All companies were seeking new outlets, new operations and broader activities.

In this connection the trend toward combinations of producers, refiners and marketers was of particular importance. Companies evidently were not content to confine their operations to only one phase of the industry but rather to seek consolidations which would put a complete chain of operations under one management.

The outstanding mergers, purchases or other consolidations during the past year involved the Standard Oil Co. of Indiana and Pan American Petroleum & Transport Co., Barnsdall Oil Co. and the Waite Phillips Co., Standard Oil Co. of California and the Pacific Oil Co., the Continental Oil Co. and the Texhoma Oil & Refining Co., the Pure Oil Pipe Line Co. and the Prairie Pipe Line Co.

Indiana-Pan American

The purchase of a large interest in the Pan American Petroleum & Transport Co. by the Standard Oil Co. of Indiana from E. L. Doheny last April placed the latter company in line as second largest oil company in the world next to the Standard Oil Co. of New Jersey and gave the company an international aspect.

The Indiana Company purchased its interest in the Pan American through the Pan American Eastern Petroleum Co., which was organized for this purpose by the Indiana Co., Blair & Co., Chase Securities Corp. and British interests. The deal included the British-Mexican Petroleum Co. and its subsidiary, the Lago Petroleum Co. However, the British-Mexican Petroleum Co. later was disposed of to Lord Inverforth and the British interests he represented. The Lago Petroleum holdings were retained in the organization of the Lago Oil & Transport Corp., as a subsidiary of the Pan American Petroleum & Transport Co.

The purchase of the control of the Pan American Petroleum & Transport Co. by the Pan American Eastern Petroleum Co. did not include the western properties owned by E. L. Doheny. These were segregated in the subsidiary company, the Pan American Petroleum Co., which later was taken over by the newly organized Pan American Western Petroleum Co., of which Mr. Doheny retained control with headquarters at Los Angeles, Calif.

The Standard Oil Co. of Indiana deal assured that company of a foreign source of crude supply in the event of inability to obtain American oil and also provided an export market for its products.

Barnsdall-Waite Phillips

The Barnsdall-Waite Phillips consolidation merely united two large independent oil companies. Negotiations for the purchase of the Waite Phillips Co. by Blair & Co., New York bankers, began last July and since then rumors have linked a number of important companies, both standard and independent, in the deal. It was not until December that it was officially announced that Blair & Co. had made an outright cash purchase of the company for $25,000,000, which early this year was merged with the Barnsdall Oil Co. through a stock exchange. The two companies now are operating as one. Virtually all former Waite Phillips Co. executives have been replaced with Barnsdall officials and the personnel of the various offices joined.

Through the transaction, Barnsdall Oil Co. now is one of the largest independent companies with a total capitalization of $70,000,000. It still is rumored that during 1926 a number of other important Mid-Continent and California companies will be placed under the Barnsdall name. Both the Barnsdall and Waite Phillips companies had producing, refining and marketing facilities.

California Merger.

One of the latest unions completed was that of the Standard Oil Co. of California and the Pacific Oil Co. This was accomplished through a proportionate stock exchange and made possible a more well-balanced company as to oil reserves, transportation, manufacturing and distribution.

Relations of these companies have been intimate since the organization of the Pacific Co. in 1921. Stock exchange between the companies has been extensive. The Pacific Co. was almost exclusively a producer so the merger provided the Standard Oil Co. of California with ample producing properties for its refining and marketing activities. A subsidiary of the Pacific Co., the Associated Oil Co. was not included in the merger, its holdings being segregated under a new independent company being organized.

Continental-Texhoma.

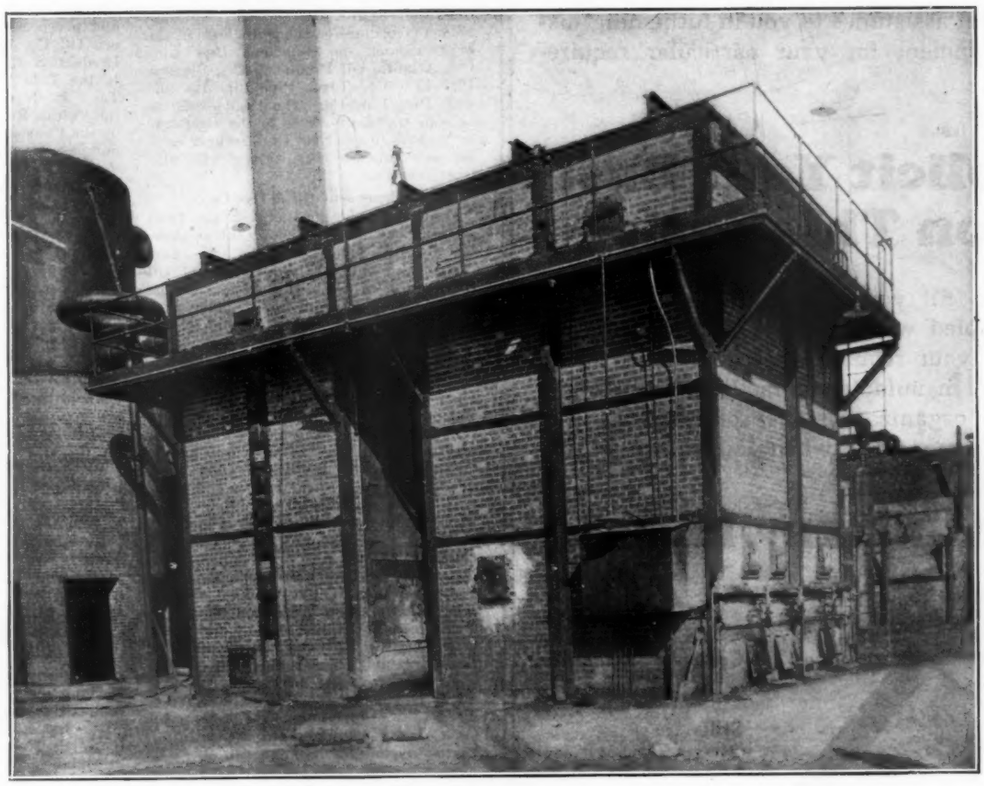
Only in the last two weeks, the Continental Oil Co. of Denver, Colo., took over the active management of the Texhoma Oil & Refining Co. of Wichita Falls, following the purchase of a controlling interest in the latter company the first of the year for $7,000,000.

This transaction strengthened the position of the Continental as one of the leading Standard Oil Co. units and makes its operating territory one of the largest in the country. The Continental late in 1924 took over the old Mutual Co., which proved a great boon to its growth. The Continental now has eight refineries strategically located and markets its products in Washington, Oregon and all Northern States east of the Mocky Mountains to the Mississippi River and Oklahoma, Kansas and Texas in the Southwest.

The Continental last June bought the B & L Oil Co., a jobbing company with

FOSTER

TUBE STILLS



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"UNITED" IRON WORKS INC. FOR SERVICE

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headquarters at Fairbury, Neb. This transaction added a large number of bulk and service stations in 17 cities, and placed the company next to the Standard Oil Co. of Nebraska as a marketer in that State.

Prairie-Pure Pipe Line

One of the most strategic combinations of the year to both parties was the purchase by the Prairie Pipe Line Co. of a half interest in the pipe line of the Pure Pipe Line Co. (Pure Oil Co.) from the Mexia Field in Texas to the Gulf.

This deal, consummated in November and effective December 31, provided the Prairie Oil & Gas Co. with a southern outlet for its crude and assured the Pure Oil Co. an ample supply of crude for its refineries in the event it is not able to obtain enough from its own production and purchases.

The Prairie is connecting the line with its main system which has a southern terminus at Hensley, Jackson County, through a branch line it operates from the Mexia Field to Hensley. The Prairie now is placed in direct competition with the Humble Oil & Refining Co., the Magnolia Petroleum Co., the Standard Oil Co. of Louisiana, the Oklahoma Pipe Line Co., Atlantic Oil Producing Co., Sinclair Pipe Line Co., Texas Pipe Line Co. and Gulf Pipe Line Co. The Prairie will be able to transport crude to the Gulf and by tankers to the East Coast refineries at far less expense than through its pipe lines overland.

Independent Oil & Gas Co.

Other consolidations during the year, although not quite so important as those already mentioned, included the purchase last June by the Independent Oil & Gas Co. of Okmulgee, Okla., of the Allied Refining Co. of Tulsa. This gave the Independent company, a producing firm, a 1,200-bbl. refinery.

Magnolia-Standard

Effective November 24, the Magnolia Petroleum Co. of Texas was merged with the Standard Oil Co. of New York. The Standard previously owned 70 per cent of the stock of the Magnolia but by the new contract, the Magnolia was dissolved, all assets being transferred to the name of the Standard Oil Co. of New York. However, the operating name of the former Magnolia holdings will remain unchanged.

Interocean Oil Co.

Another important transaction was the organization of the Interocean Oil Co. of Delaware last October, to take over properties of the Lorraine Petroleum Co., the Lorraine Refining Co., the Livingston Oil Corp., the Livingston Oil Co., all of Oklahoma, the Curtis Bay, Baltimore, Md., property of the Interocean Oil Co. of South Dakota and the United States Asphalt & Refining Co.

This merger included 100 acres along deep water with 1,600 feet of waterfront at Baltimore, the 5,000-bbl. asphalt plant of the United States Asphalt & Refining Co., a 2,000-bbl. skimming plant of the Interocean of South Dakota, a 3,000-bbl. skimming plant of the Lorraine Refining Co. at Bristow, Okla., and considerable oil production and prospective oil land in the Mid-Continent.

Western Refining Co.

In California, the Los Angeles-Western Refining Co. bought all assets of the Henderson Petroleum Corp. and the De Lendricie Oil Well Trust Co. This deal, perfected last August, involved $3,000,000. It included considerable oil producing property and assured the completion of a 5,000-bbl. refinery and shipping facilities. The new combine is operating as the Western Oil & Refining Co.

Manhattan Oil Co.

This month, the Manhattan Oil Co. of Delaware, was organized to hold the Kansas City Refining Co., the Manhattan Pipe Line Co., the Manhattan Oil Co. of Iowa, Kansas and Nebraska, the Pyramid Oil Co., the Greenland Oil Co., the Indiana Oil Co. and the Westgate Oil Co. A number of these companies have been closely associated for some time but the merger forms another well-balanced organization for production, transportation of crude, refining and marketing with total capitalization of $20,000,000.

Hawkeye Oil Co.

The Hawkeye Oil Co. of Waterloo with 400 bulk and service stations in Iowa, Minnesota, Illinois, Indiana and Kentucky, was the object of two transactions during the year. In March the Producers & Refiners Corp. purchased the controling interest from A. H. Caward and Walter B. Caward, but in October sold it back.

Pure Oil-Humphreys-Boyd

A producing deal last April was the purchase by the Pure Oil Co. of the entire holdings of the Humphreys Boyd Oil Co. for $7,000,000. The deal provided $2,500,000 cash with the remainder an exchange of Pure Oil stock for Humphrey Boyd shares.

Some of the other deals included the merger of the Empire Oil & Grease Co. and the Empire Oil Works of Oil City, Pa., effective December 1; the purchase by the Texas Pacific Coal & Oil Co. of the Central Texas Petroleum Co. of Texas in October; the purchase by the Tidal Oil Co. of all Mid-Continent production and prospective production of the Eastern Oil Co.; the purchase by the Gulf Production Co. of a controling interest in the Tide Water Oil Co. of Houston, Tex., in November; the absorption of the Vulcan Refining Co. of Corapolis, Pa., by the Freedom Oil Works of Pittsburgh; purchase by the Marland Refining Co. of Ponca City of the Marland Refining Co. of Indiana and the Lloyd Breckenridge Grease Co. in June and the purchase in September of the Evansville Oil & Grease Co. of Evansville, Ind; the purchase by the Louisiana Oil Refining Corp. of the Calcote Oil Co., Inc., a marketing company in September, including 21 bulk and service stations; the sale of the Kingwood Pipe Line Co. of Okmulgee, Okla., to eastern oil interests in October; the organization of the Constant Refining Co. to take over the Constantin Oil & Gas Co. and the Constantin Refining Co., the absorption of the Jacobs Oil Co., jobbing firm of Portsmouth, Ohio, by the Refiners Oil Co. of Dayton, Ohio.

A large number of refining companies bought out strings of bulk and service stations and other marketing facilities, in addition to the above mentioned transactions, while there also were a number of mergers of large marketing and jobbing firms themselves.

SAYS LAW ON OIL IS PREMIUM ON WASTE

(Continued from Page 174)

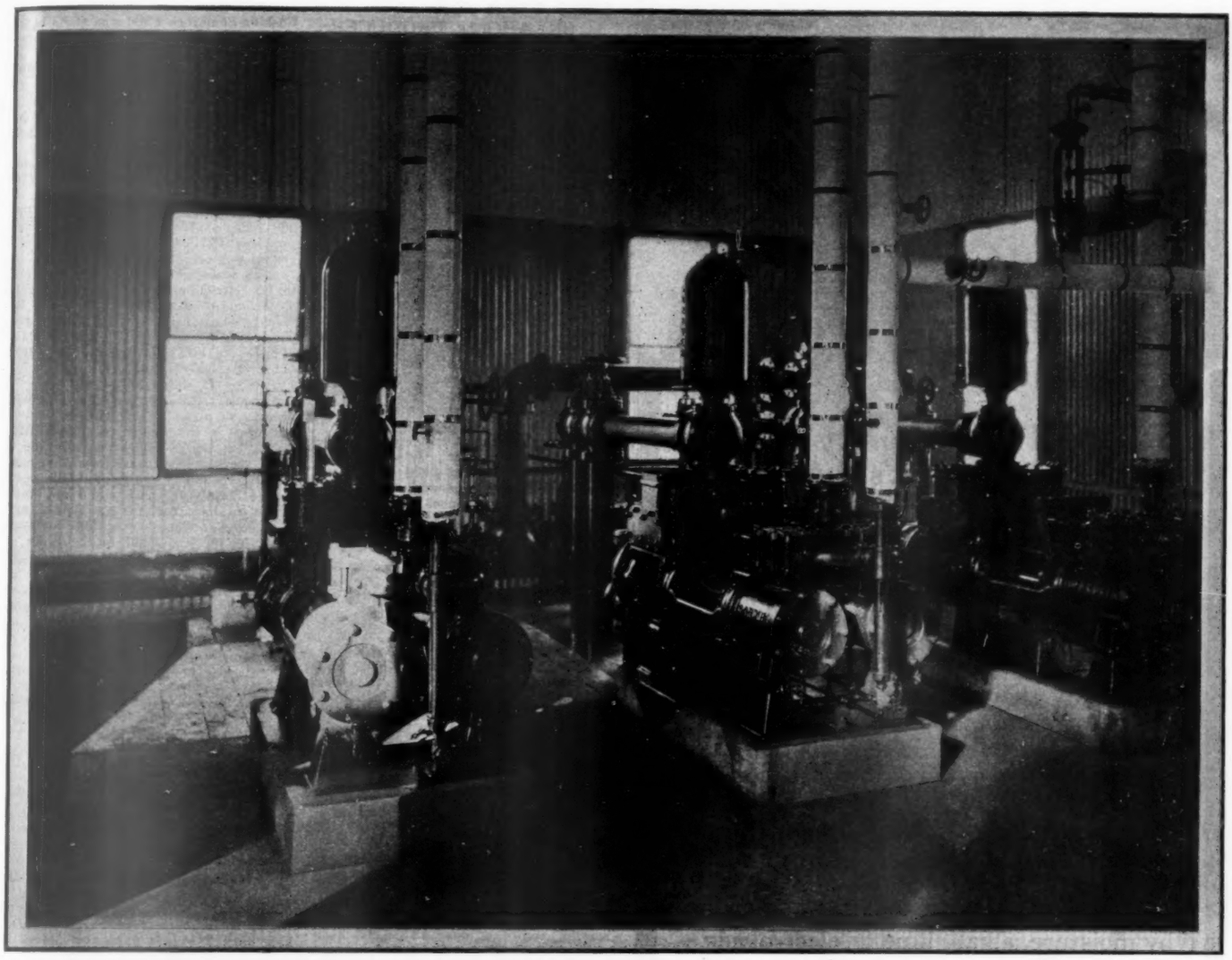
Two of them were developed with this competitive drainage absent. The pools of the first class are Wortham and Powell in North Texas and Tonkawa deep sand in Oklahoma. The pools of the second class are Rainbow Bend in Kansas and Reagan County in Texas.

Now it is worthy of note all of these five pools were discovered at a time when the petroleum industry was already demoralized and had been demoralized for a year or more from an overproduction arising out of the Los Angeles Basin Pools and rich pools in the Mid-Continent. Yet the maps and charts indicate the three competitive drainage pools were intensively drilled, hurriedly developed, and resulted in throwing additional floods of oil on a market already much oversupplied. The stocks of oil in tankage were already more than the industry could well carry, but new storage was built to receive these vast floods of oil taken from nature's reservoir where undisturbed it could have remained without cost or loss until needed, but for this lack of cooperation between competing owners.

Reagan and Rainbow Bend

Contrast with these, Reagan County and Rainbow Bend. They also were discovered during this period of overproduction: Reagan County a few weeks after Powell; Rainbow Bend a few months after Powell. Reagan County, it is true, was remote from transportation facilities which in a measure retarded its development. Rainbow Bend on the other

(Continued on Page 182)



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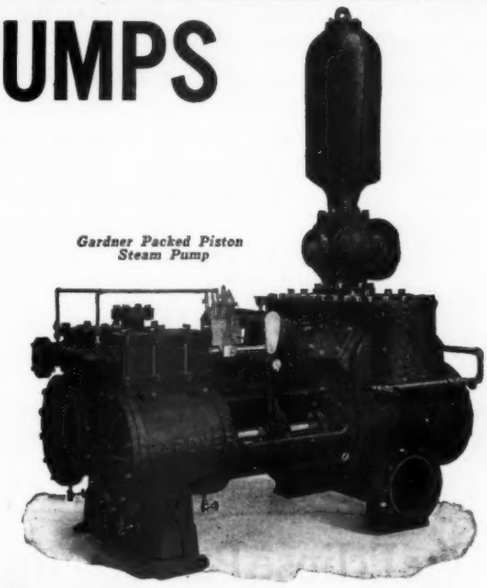

Gardner Packed Piston Steam Pump

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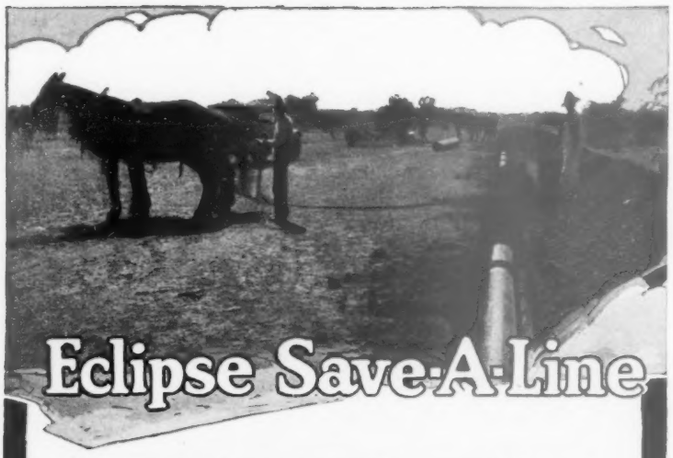

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GOOD YEAR FOR OKLAHOMA PRODUCERS

(Continued from Page 108-C)

way of big production. It can be definitely counted among the settling fields, along with Cushing, Burbank, Healdton, Bristow and Glenn Pool, all of which were nationally famous in their day.

Garber's Short Spurt

The Garber Pool, in Garfield County, most of which is owned by the Sinclair Oil & Gas Co., and which had been nursed along very conservatively for years; noted particularly for the high gravity of its crude rather than for the quantity of oil it produced, scored a total production of 7,484,428 bbls. last year, or 5,535,395 bbls. more than it produced in 1924, when it turned out 1,849,133 bbls. The new and increased production came from a small group of Wilcox sand wells, one of which broke all records for initial production of high grade oil in the United States. This pool reached its high point with its production for November, an average of 60,835 bbls. per day. It started the year off with an average of 4,600 bbls. a day in January, and closed with 40,100 bbls. in December. This pool gave the producers in other fields a scare for a time, as it was feared another Tonkawa deep sand field had been uncovered and a vision of a 100,000-bbl. development was in the minds of many oil men. Salt water incursions did much to reduce the volume of oil the field might have produced.

Burbank Settling

The famous old Burbank Pool in Osage and Kay Counties dropped off from 30,805,856 bbls. in 1924, to 19,954,667 bbls. in 1925, a decline of 10,851,189 bbls., a drop of nearly 35 per cent. It is pretty well drilled up and defined. Osage County outside of Burbank fell off from 16,332,645 bbls. in 1924, to 12,469,556 bbls. in 1925, a decline of 3,863,089 bbls. An occasional sensational Wilcox sand well maintained more or less interest in the Osage Fields in the course of the year.

The Cushing-Shamrock Field fell off 718,737 bbls. last year as compared with the year before, the production in 1925 having been 8,024,550 bbls. and in 1924, 8,743,267 bbls. This field has a 12-months' record of over 78,870,295 bbls. made from September 1, 1914, to August 31, 1915, an average of 216,083 bbls. per day, with a peak estimated at over 300,000 bbls. in a day and a peak month in April, 1915 of 288,600 bbls. a day or 8,658,000 bbls. in the month.

Hewitt, in Carter County, declined from 6,925,965 bbls. in 1924, to 5,324,672 bbls. in 1925, and Healdton, its neighbor in the same County, which at one time produced close to 100,000 bbls. a day, made 5,575,981 bbls. last year, a decline from 6,039,451 bbls. the year before. The Graham-Fox area in Carter County, which produced 6,031,958 bbls. in 1924, dropped to 4,442,526 bbls. in 1925.

Big Producing Counties

New pools in Kay County more than offset the decline in older areas in the Kay-Noble County area and production in those two counties, which are carried as one division because of the fact that the big Tonkawa Field is in both counties, produced last year 38,817,838 bbls. as against 36,961,456 bbls. in 1924. The production of that part of the Burbank Field lying in Kay County, is included in the above tabulation.

A great falling off in the total production in Osage County last year is noted. In 1924, when the production of the County reached its greatest figure for a year, the County produced 38,690,662 bbls. It dropped over 10,000,000 bbls. last year, the total having been 28,509,498 bbls. Osage County in the past 7 years produced 198,828,012 bbls.

Creek County Supreme

Creek County, the home of the Cushing-Shamrock and Bristow Fields, the Glenn Pool and other pools, produced 24,501,390 bbls. last year or over 10,000,000 bbls. less than in 1923, and 5,000,000 bbls. less than in 1924. Creek County's peak came in 1915, when the Cushing-Shamrock Field was at its height and the Glenn Pool was yet producing in the major class. In that year Creek County produced approximately 75,000,000 bbls. Creek County has been the largest producer of oil in the State. In the past 7 years its total output has been 185,137,772 bbls., and it has been a large producer since 1906.

Carter County also fell off in production last year, its total of 17,669,798 bbls. comparing unfavorably with the 20,537,609 bbls. of 1924, and the 23,933,483 bbls. of 1921. Carter County has produced 132,024,260 bbls. in the past 7 years, and over 211,000,000 bbls. in the past 13 years, or since oil was discovered in the Healdton Field. William Krohn of Ardmore, editor of Krohn's Oil Review, credits Healdton with a total production (1913-25) of 137,318,503 bbls.; Hewitt (1919-25) 53,698,491 bbls.; Graham (1922-25) 10,610,517 bbls.; Fox (1918-25) 7,054,303 bbls.

The year 1926 opens in Oklahoma with production about 30,000 bbls. a day below what it was at the opening of 1925. It was on the decline at the opening of both years. The same condition confronted Oklahoma oil men at the opening of both years. They did not know where to look for a certainty of new production. There was not a "sure shot" big pool in sight in the State on January 1, 1925, or on January 1, 1926. Last year Kay, Garfield, Logan, Kingfisher, Okfuskee, Seminole, Hughes, Lincoln and Pottawatomie Counties were looked to to supply new fields. This year the same counties, and Garvin County and the Oklahoma Panhandle counties look good to many operators and a continuance of deeper drilling in old pools is confidently expected to yield favorable results, as it did in 1925.

STATE LAND FOR LEASE

Commissioners of the Land Office of the State of Oklahoma will receive sealed bids until 2 o'clock p. m. on February 23, for oil and gas leases on the following tracts:

Kay County — SW Section 33-28n-1e, 160 acres.

Pawnee County—SE Section 16-21n-7e, 160 acres; NE SW Section 16-21n-7e, 40 acres; Lot 5 and S half NW Section 16-21n-7e, 97¼ acres.

The commissioners will receive sealed bids until 2 o'clock p. m., on March 2, 1926, for oil and gas leases on the following tracts:

Stephens County—W half NE, W half of E half NE, Section 13-1n-9w, 120 acres; W half SE, W half of E half SE, Section 13-1n-9w, 120 acres; E half NW, Section 13-1n-9w, 80 acres; E half SW, Section 13-1n-9w, 80 acres.

FATAL GLYCERIN EXPLOSION

BRADFORD, Pa., Feb. 13.—Three months ago Albert Bennett succeeded Julius Skinner as a teamster for the Illinois Torpedo Co. Skinner was killed on October 29 by a nitroglycerin explosion in the company's magazine, 1 mile beyond Irvine's Mills. This week Bennett met a fate like that of his predecessor when more than 200 quarts of the dangerous liquid exploded about 300 yards away from the scene of Skinner's death.

GEOPHYSICAL METHODS

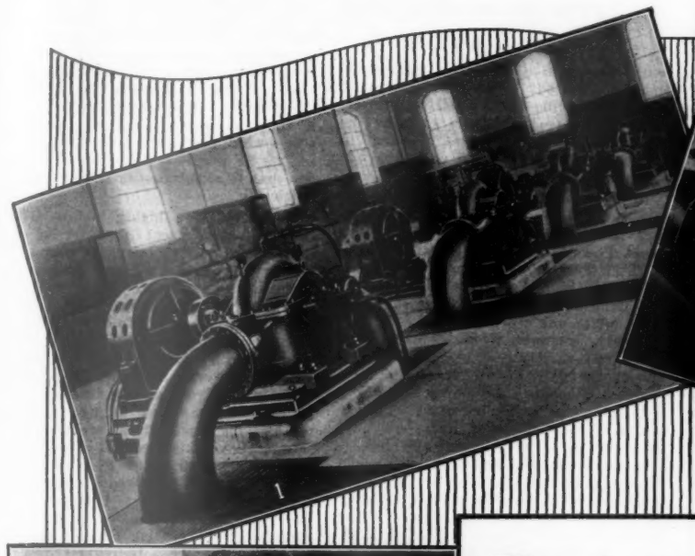
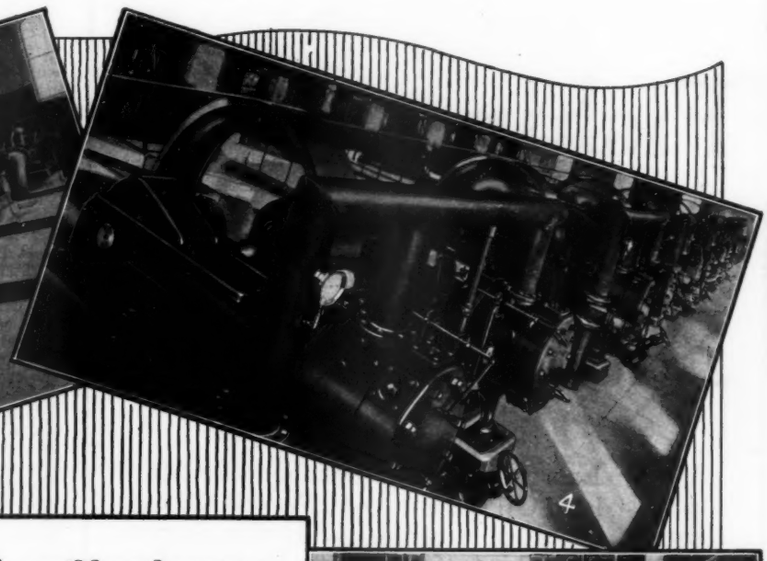
The Askania-Werke A. G. of Berlin, Germany, is distributing to the petroleum industry folders on the geophysical methods of exploring for mineral deposits.

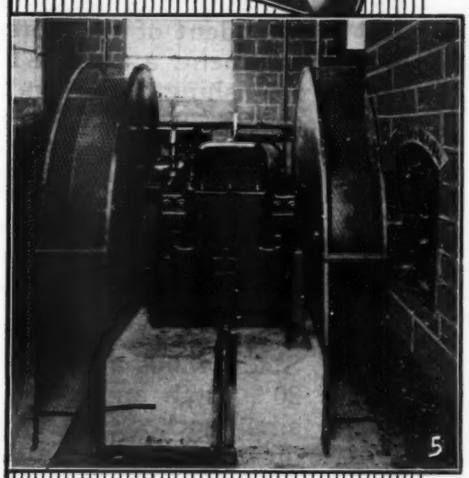
The interest in geophysical instruments used in the petroleum industry is increasing, and the folder contains illustrations of the articles necessary to conduct this work.

The company maintains American headquarters at Houston, Tex.

NORRIS CHANGES POSITION

M. L. Norris, formerly of the Waite Phillips Co. of Tulsa, Okla., is now in charge of sales for the E. C. Meier Lubricating Co. of Wichita, Kans., handling a line of heavy oil field specialties, including pumps, flowers and sucker rod guides.



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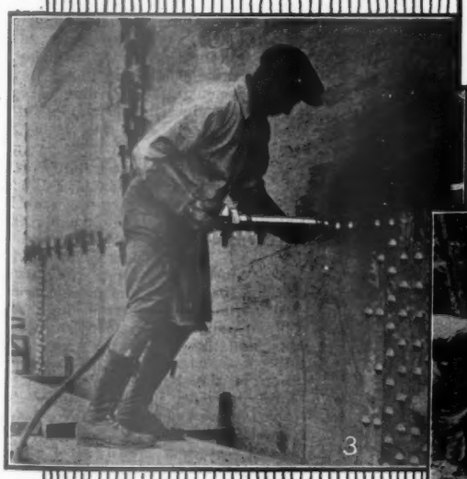
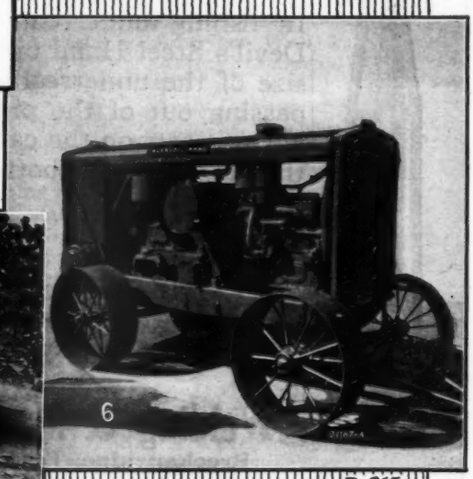

R-917

Ingersoll-Rand

Fishing for Diamonds

Last March we furnished the Marland Oil Company at Terrell, Texas, on order of Mr. L. J. Snyder, Superintendent of the Core Drilling Department, a small STEEL HAND for fishing a diamond core bit that cost $2500.00. The bit was fished without difficulty.

Up to last October, a total of three such jobs had been cleaned up—$7500.00 worth of diamonds with a tool costing $240.00 and still as good as new.

Steel Hands are now made 2½" to 20", catch any small objects from small socket slips to a 20" fish tail bit or set of drilling jars. Often the first job saves the cost of a tool.

In fishing underreamer lugs the Devil's Steel Hand opens up to the size of the underreamed hole after passing out of the pipe and closes when it sets on the cavings, around the lugs or on the bottom.

RIGHT NOW SHIPMENTS

For sale or rental direct or through your supply house

Brown Welding & Machine Co.
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Dunigan Tool & Supply Co., Panhandle, Tex.
Acme Fishing Tool Co., Okmulgee, Okla.
Oil Well Supply Co., Tulsa, Okla.

P. S.—New Prices on Steel Hands are 10% Less.

SAYS LAW ON OIL IS PREMIUM ON WASTE

(Continued from Page 178)

hand was close to adequate transportation facilities but never gave promise of being so prolific as Powell. However, neither of these conditions explains the difference in the rate of development in these pools as compared with that in the other three.

Reagan County, you will note, never had more than three drilling wells for each producing well in comparison with 14 at Powell, 29 and Wortham and 36 at Tonkawa. Consequently, Reagan County never had a great flush production immediately followed by a rapid decline but on the other hand, it continued a steady, constant increase over a period of 27 months and was still ascending at the date of preparation of this chart. Although Rainbow's discovery well was in a region close to transportation, close to facilities, and could have been rapidly developed had the acreage been much cut up, yet in the manner it was developed its ratio of drilling wells to producing wells never reached a higher point than 2½ to 1 as against 14 at Powell, 29 at Wortham and 36 at Tonkawa. Neither did Rainbow Bend have a high peak of production followed by a rapid decline but it gradually increased for a period of 19½ months before starting back as against 1½ months for Wortham, 5 months for Tonkawa, and 6 months for Powell.

Wasteful Methods

A few only of the outstanding results of competitive drainage as contrasted with petroleum development when such drainage is in some manner eliminated or regulated might be summed up as follows: In the first place the gas is permitted to escape, increasing viscosity and surface tension of the oil and consequently very greatly lowering the amount that can be taken out of the pool, for it then flows less freely and more clings to the walls of the minute interstices in which it is contained. Second, many needless dry holes are drilled. Third, many unnecessary wells are drilled. Fourth, gas is permitted to waste without use. Fifth, constant instability throughout the industry is induced.

These wonderful pools of Powell, Wortham and Tonkawa should have been blessings to the industry. Instead they were curses. The whole industry looked anxiously for their decline. Their product was forced into channe's of every kind and character so that it might be exhausted. On the other hand, Rainbow Bend and Reagan County never were regarded as menaces. During overproduction periods their oil was held back awaiting the time it could be utilized to better advantage. They were real reserves.

Surely these results listed and a multitude of others arising out of the same cause, and familiar to every oil man may properly be designated waste. Through 35 years of close personal contact with oil field development, it appears to me that until during the past year there was never a time there existed a question in the minds of men connected with that industry but that the same is and has been an extremely wasteful one. It was common knowledge and opinion. No one denied it. No one thought it worthy of denial. It was regretted. Attempts were made to improve it. Each individual operator did all he reasonably could to prevent, but there was certain underlying principles of ownership and characteristics of the product over which he had no control. The only thing he could do, he did do, namely prevent waste after he reduced the product to his possessions.

Suggested Remedy

All this discussion is useless it leads toward some means by which these evils I have described can be overcome. It is inconceivable that the petroleum industry will rest content without determining some manner in which these evils can be overcome without at the same time bringing upon itself and the nation evils more objectionable than those from which it seeks to escape. Up to this time we find the evils have developed and become perpetuated because we have attempted to apply to petroleum principles of law and practices unfitted to the nature of the product. It might be well now for a time to forget what we want and study what petroleum must have according to its peculiar characteristics in order that it may be conserved and utilized efficiently.

Petroleum is a highly mobile product confined under great pressure in very large containers frequently miles in extent with right on the part of many individuals to puncture those containers and draw off the product. It should be visualized that every time one individual punctures that container he immediately modifies in a large way the fortunes and values of every other individual with a like right. Progress will be made if we regard the emptying of that container as one big engineering problem, determining how this peculiar product contained and confined as it is under high pressure can be removed as needed and retained until needed. I am convinced the pools must be handled in some more completely cooperative manner than has been the practice. Individual operators must make concessions to a degree unnecessary in the handling of less mobile products.

The more difficult question is, How can it be brought about? Constant education on the part both of the industry and the Government will help but in addition there will perhaps be necessary some measures of legislation to make such degree of cooperation workable.

Compliments Doherty

While it is perhaps too early to fully evaluate the recent contribution made by Mr. Henry L. Doherty when he disclosed the results of his most interesting experiments regarding the changes in viscosity and surface tension of oil brought about by reducing the gas pressure, yet enough is already known to demonstrate this contribution will probably be one of the most powerful forces in bringing about some character of cooperation that will make possible the retention of pressures. If that be done it will be but a short step to the elimination of competitive drainage. What form that will take I can not even predict. The Federal Government, I have no doubt will assist materially in this necessary education by so utilizing the lands already blocked up under its control to demonstrate the value of applying sane engineering principles to the extraction of oil and gas from these great containers.

Having urged the desirability of entire pools being consolidated I think as a precautionary measure we should go a step further in order that public thinking might not become confused and urge that both Government and industry should constantly draw a clear distinction both in practice and precept between consolidation of properties in a single pool to eliminate competitive drainage evils, and those two other types of consolidations which have no remote relation to this but which will endeavor to ride in under the same banner if and when the movement in its favor becomes general. The term "consolidation," like charity, covers a multitude of sins and the public is not discriminatory but it pays the bills. The one type of consolidation that should not be permitted to ride in on the wave is that for the purpose of monopoly. The oil industry must maintain competition if it would avoid Government regulation but monopoly to me does not appear imminent. The second type of consolidation that should not be permitted to ride too far on this wave is consolidation for revenue for the consolidators only, extracted from a too credulous public attracted by the magic of the word consolidation and not realizing there is little magic in size a'one and usually not much merit in consolidating a billy goat in Timbuctoo with a bunch of sea gulls in Patagonia.

AMERICAN Heavy Duty ROLLER Type "C" BEARINGS

"Oilwell" (Patented) 54" Triple Sheave Spring Traveling Block designed for 50-ton loads. Weight 3,200 lbs. (without guards). Equipped with American Heavy Duty Type "C" Roller Bearings.

Smoother Traveling

When you're in a race to hit the pay sand or trying to make up time lost through trouble in the hole, you need smooth-working traveling and crown blocks. And don't forget the old reverse clutch, either.

Proper lubrication will help your speed but the fundamental factor in the blocks and the clutch is the presence of proper roller bearings. Although out of sight—inconspicuous because unobservable—experienced drillers know that satisfactory operation of the blocks depends more upon their bearings than upon any other part.

In the final analysis they are the real carriers of the loads. Every sheave in the block passes the buck to the bearings.

Make sure the bearings in the blocks are the kind that don't pass the buck back on the driller by specifying—

AMERICAN HEAVY DUTY TYPE "C" ROLLER BEARINGS

They are specially designed for this particular service by a manufacturing company that makes Roller Bearings for *industrial purposes only.*

Oil Field Manufacturers endeavoring to incorporate the best bearing service they can provide in their blocks, are standardizing on the *American Heavy Duty Type C* bearing. Oil Well Supply Company, Lucey Manufacturing Company, Boykin Machine Company, American Well & Prospecting Company,—use this type bearing exclusively for these and other purposes. Considerable study of their requirements and the application of our industrial experience in Roller Bearing manufacture, has resulted in a product that satisfies these manufacturers—and that will satisfy you.

Get them in the first place: Use them for replacing plain bearings.

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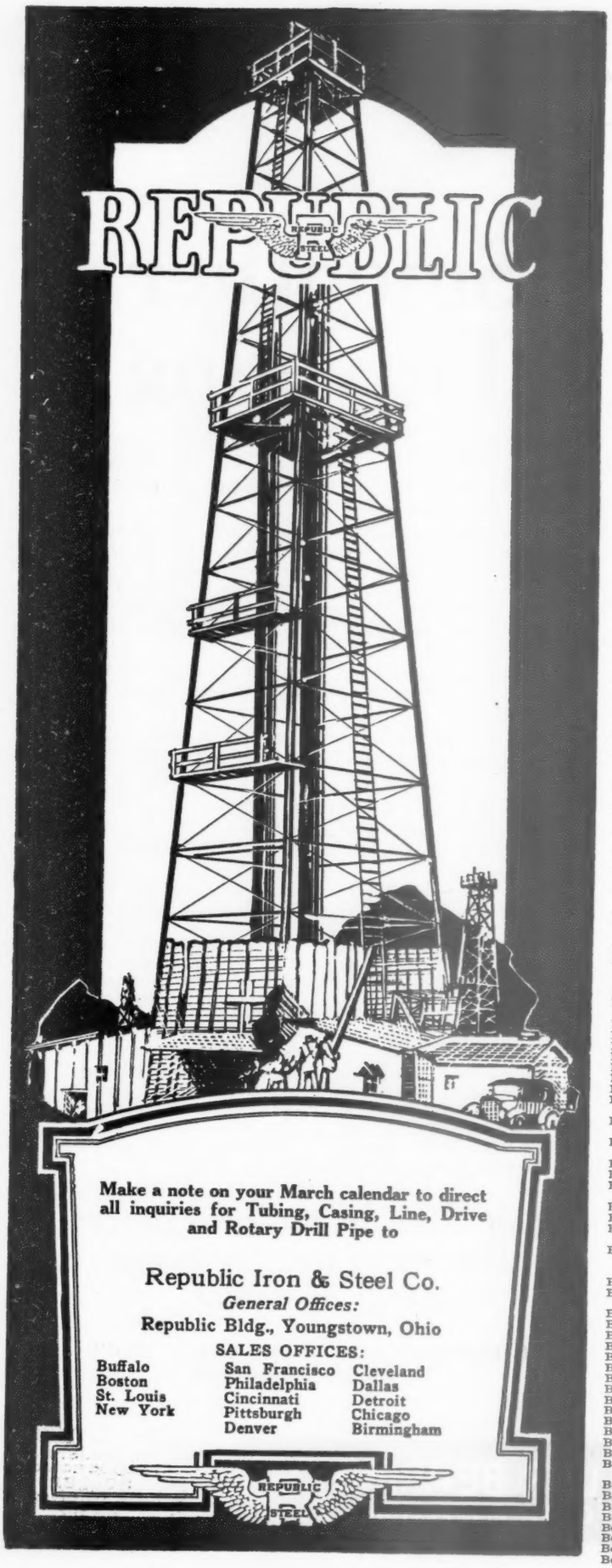

OKLAHOMA PRODUCTION IN FOURTH QUARTER SHOWED SLIGHT INCREASE

The gross production of crude petroleum in Oklahoma in October, November and December of 1925 totaled 42,690,663 bbls., an increase of 196,315 bbls. over the third quarter, according to the report compiled by the State Auditor's office at Oklahoma City for taxation purposes. The report, as compiled by the State Auditor, follows:

Name and address—	Barrels
A	
Aaronson, C. T., Tulsa	1,738
Abicht Drilling Co., Tulsa	150
Acacia Oil & Gas Co., Pawhuska	765
Acta Oil Co., Okmulgee	1,196
Acme Development Co., St. Louis, Mo.	2,182
Ada Development Co., Ada	2,587
Adamson, M. E., St. Louis, Mo.	12,500
Advance Co., Inc., Fort Worth, Tex.	300
Aggas, John, Morris	325
Aggas, O. A., Morris	258
Ajax Oil Co., Tulsa	339
Albion Oil Co., Tulsa	6,897
Alcorn Oil Co., Tulsa	35,924
Aldrew Oil & Gas Co., Tulsa	1,997
Alexander, J. H., Tulsa	236
Alexander-Shakely Pet. Co., Tulsa	1,669
All American Oil & Gas C., Oklahoma City	3,064
Allen, J. B., Tulsa	723
Allen, Sam T., Sapulpa	158
Allen Well Co., Ardmore	719
Allison, B. E., Tulsa	5,741
Almeda Oil Co., Tulsa	3,979
Alton Oil Co., Bartlesville	205
Amerada Pet. Corp., Tulsa	588,746
American Contracting & Producing Co., Bartlesville	267
American Eagle Oil Co., Bartlesville	21,012
American Oil Development Co., Pittsburgh, Pa.	11,340
American Oil & Gas Co., Bartlesville	5,300
American Pipe Line Co., Wichita Falls, Tex.	14,599
American State Bank, Boynton	436
Amos, Wilmer & Grindle, Dewey	1,275
Amster, N. L., Ardmore	17,559
Ancutt, G. C., and H. S. Swift, Tulsa	85
Anderson, C. F., trustee, Dallas, Tex.	2,974
Andes Oil & Gas Co., Tulsa	333
Anglo-Texas Oil Co., Tulsa	28,458
Anolu Petroleum Corp., Blackwell	6,500
Anthony, S. W., Mounds	574
Arkansas City Ref. Co., Arkansas City, Kans.	2,919
Arkansas Fuel Oil Co., Pittsburgh, Pa.	20,299
Arthur Oil Co., Sistersville, W. Va.	7,722
Ashland Oil Co., New York, N. Y.	3,256
Associated Oil Producers, Chicago Ill.	3,118
Atlantic Oil Prod. Co., Dallas, Tex.	202,665
Aubyme Oil & Gas Co., Garber	3,187
Avery, Cyrus S., Tulsa	59
Avery, Cyrus S., Special No. 1, Tulsa	239
Avery, Cyrus S., Special No. 2, Tulsa	118
Avery Oil & Gas Co., Tulsa	2,132
Aymer, Chas., Nowata	411
B	
Bailey, W. B., Bartlesville	356
Baker, Frank A., Tulsa	555
Baker Oil & Gas Co., Independence, Kans.	149
Baker & Strawn, Tulsa	17,031
Ball, Cora G., trustee, Independence, Kans.	1,019
Baltic Operating Co., Bartlesville	7,566
Bamm Oil Co., Tulsa	143
Bander & Franklin, Tulsa	536
Barbara Oil Co., Oklahoma City	4,458
Barber Oil Co., Tulsa	317
Barnsdall Oil Co., Tulsa	488,584
Barr, W. E., Nowata	158
Bartles-Johnston Oil Co., Bartlesville	596
Bartlesville Oil & Improvement Co., Bartesville	143
Bartlett, D. A., trustee, Marietta, Ohio	220
Bartlett, R. H., Receiver, Tulsa	2,974
Baum, Henry, Ardmore	750
Baxter, A. B., estate, Atlantic City, N. J.	774
Baxter, L. W., Tulsa	174
Baxter, L. W., agent, Tulsa	275
Bay State Oil & Gas Co., Kansas City, Mo.	13,471
Bay State Oil & Gas Co., Kansas City, Mo., and Paden Oil Co., Oklahoma City	5,338
Baynes, John A., executive, Mounds	174
B. B. and Waite Drilling Co., Bartlesville	69
Beacon Oil Co., Bartlesville	10,862
Beal, C. E., Sapulpa	807
Beams, Drew, Okmulgee	1,001
Beard, Earl, Bartlesville	1,485
Beattie, R. L., trustee, Bartlesville	111
Beau-Ard Oil Co., Ardmore	534
Bebout, W. M., Bartlesville	186
Beggs Oil & Gas Co., Okmulgee	11,680
Bellis & Good, Cushing	3,100
Ben-Franks Oil Co., Enid	868
Benge, F. L., Delaware	1,670
Bennett, Elizabeth, Sapulpa	168
Bergen Oil & Gas Co., Tulsa	4,877
Berlin & Duffield, Tulsa	418
Bermingham, J. A., Fort Worth, Tex.	4,045
Berry, Geo. D., Coffeyville, Kans.	946
Berry Petroleum Co., Tulsa	42,265
Bertenshaw, H. G., Nowata	1,446
Besser, W. T., Sand Springs	315
Best, F. A., Tulsa	287
Betty Ann Oil Co., Okmulgee	1,775
Betty G. Petroleum Co., Cement	1,775
Betty Ruth Oil Co., Broken Arrow	159
Biddle Oil Co., Tulsa	1,818
Big Windy Oil Co., Tulsa	283
Billy Oil Co., Chelsea	170
Bingman Oil Co., Okmulgee	1,210
Bingman, W. B., Okmulgee	1,175
Bingman, W. B., trustee, Okmulgee	249
Bingman-Smith Oil Co., Okmulgee	2,961
Bird, Gaffney & Simons, Bradford, Pa.	1,218
Bisett, Lytle & Gray, Tulsa	5,332
Bishop Oil Co., Tulsa	175
B. Jack Oil Co., Sapulpa	572
Black, J. J., Phoenix, Ariz.	142
Black, W. A., Montreal, Canada	351
Black Gold Prod. Co., Tulsa	450
Black-Sivalls & Bryson, Bartlesville	6,101
Blackstone Oil Co., Tulsa	1,490
Blackwell Oil & Gas Co., Blackwell	127,377
Blakely, T. T., Okmulgee	688
Blakely Oil & Gas Co., Okmulgee	245
Blakeslee, H. W., Nowata	1,872
Bloch Investment Co., Tulsa	383
Bloch Oil Co., Tulsa	974
Blum Oil Co., Nowata	73
Board, M., Muskogee	950
Bokma Oil Co., Walters	789
Bole, Geo. S., Tulsa	28,117
Boles, Neal and Perry, Cleveland	681
Bolivar Run Oil Co., Tulsa	1,208
Bonnell, John H., Los Angeles, Cal.	1,104
Borealis Oil Co., Oklahoma City	101
Boso, Fred M., Tulsa	1,895
Boso Drilling Co., Tulsa	87
Bovaird, W. M., Sapulpa	9,314
Braden, C. E., Tulsa	192
Braden Co., The, Tulsa	2,754
Braden & Beren, El Dorado, Kans.	368
Braden & McClure, El Dorado, Kans.	600
Braden & Moore, Tulsa	13,358
Bradfield, C. H., receiver, Tulsa	6,877
Bradford Oil Corp., Robinson, Ill.	331
Bradley, Anna, E. A. and A. E., Tulsa	1,295
Bradnorking Oil & Gas Co., Tulsa	801
Bradstreet, J. G., Muskogee	341
Bradstreet, J. G. & Co., Tulsa	488
Brady, E. H., Tulsa	690
Brady, E. H., Tulsa, John Swanson, Fred Swanson, estate, Chanute, Kans., Dan Kelly, Marietta, Ohio	1,839
Brandes Oil Co., Nowata	76
Branson & Harmon, Nowata	1,000
Breckenridge, F. H., Chelsea	95
Breene, Frank M., trust estate, Tulsa	23,462
Breene, Mabel V., Tulsa	46
Brewer, R. P., trustee, Tulsa	4,293
Bridgman Oil Co., Nowata	166
Bright, Samuel, Okmulgee	885
Brittain, R. E., Oklahoma City	11,210
Britton-Johnson Oil Co., Tulsa	12,698
Brock, Chas. N., Okmulgee	675
Brock, John L., Jr., Okmulgee	3,892
Brown, Chas. H., Oklahoma City	29
Brown, E. A., Greencastle, Ind.	175
Brown, Guy Oil Co., Wichita Falls, Tex.	3,217
Brown, L. H., Karns City, Pa.	282
Brown, Robert D., trustee, Kansas City, Mo.	3,457
Brown, Robert D., trustee, Kansas City, Mo.	1,040
Brown, S. P., Bristow	180
Brown, Tracy D., receiver, Tulsa	14,063
Brundred Oil Corp., Oil City, Pa.	2,001
Bruner & Abbott, Tulsa	251
Bruner Oil Co., Independence, Kans.	262
Bucher, P. O., Bartlesville	385
Buckles, C. O., Tulsa	1,710
Bull Head Oil Co., Ardmore	766
Burke, Chas. F., Tulsa	642
Burke-Gibbs Oil Co., Tulsa	2,174
Burke-Gibbs Oil Co., Tulsa	2,714
Burke & Greis, Tulsa	494
Burke-Greis Oil Co., Tulsa	73,986
Burke-Hoffield Oil Co., Tulsa	12,385
Burns, C. T., Broken Arrow	88
Burns, Joe., Okmulgee	3,262
Burton, Dan A., and M. Dickinson, Tulsa	247
Butler, A. B., guardian, Tulsa	131
Bu-Vi-Bar Petroleum Corp., Tulsa	4,135
Byers, C. F., Sapulpa	242
Bynum, G. T., Tulsa	723
Bynum, Maude E., Anna Bradley, Irene Milditch, Edith Parr, Tulsa	1,178
C	
Cala Belle Oil Co., Cement	1,031
Caldwell, Geneva S., Chelsea	136
Callahan Oil Co., Omaha, Neb.	127
Callihan, W. F., Sapulpa	72
Cameron Ref. Co., Ardmore	84,420
Campbell, C. C., Morris	150
Campbell, H. B., Welch	224
Campbell, H. C., Nowata	1,240
Campbell, H. L., Nowata	425
Campbell, H. L., trustee, Nowata	310
Campbell, J. A., No. 2, Tulsa	294
Campbell Oil Co., Tulsa	5,755
Campbell & Byers, Cherryvale, Kan.	612
Campbell, Hanlin & Cobbs, Nowata	96
Campbell & Wolford, Tulsa	792
Canada Oil Co., Nowata	418
Canadian U. S. Oil & Ref. Co., (W. A. Mitchell, receiver), Bartlesville	1,015
Canary, E. L. and A. J., Caney, Kans.	2,125
Canary, S. C., Tulsa	9,506
Canterbury, S. L., Bristow	1,876
Carder, A. E. et al, Coweta	275
Carlock & Dexter, Ardmore	3,232
Carey Oil & Gas Co., Wellsville, N. Y.	274
Carner, Akin & Argue, Bartlesville	1,036
Carpathia Pet. Co., Tulsa	26,904
Carpenter & McClung, Sapulpa	675
Carr, J. M., Okmulgee	150
Carr, M. L., Okmulgee	6,020
Carson, B. D., Cleveland	150
Carson Oil Co., Okmulgee	4,248
Carter Oil Co., Tulsa	1,814,064
Cassidy, Alice M., Admr., Guthrie	3,452
Caswell, Chas. H., Bartlesville	146
Cayuga Oil Co., Tulsa	486

A Dependable Company

The Skelly diamond is the emblem of a reliable, trustworthy organization.

Service is an easy thing to talk about, but only dependability can earn a reputation for service. If Skelly tells you something will be done by a certain time you can count on it, barring only unsurmountable difficulties.

With our own production of crude and our own pipe lines to our refinery, we have an adequate reserve of highest grade raw material. The equipment of our refinery is modern and complete; the personnel is experienced, capable, *dependable*.

Close cooperation between our offices and our general shipping department, vast storage facilities and a great tank fleet—all these help make Skelly service dependable.

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Kansas City, Mo. Omaha Minneapolis

EST. 1830
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"Drill With Manila"

Wall Manila Drilling Cables

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Artesia Supply Company—New Mexico
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Great Northern Tool & Supply—Montana
Hinderliter Tool Company—Oklahoma
Murray Tool & Supply Company—Oklahoma
New Martinsville Supply Company—New Martinsville, W. Va.
Republic Supply Company—Oklahoma and Texas
Rope & Cordage Company—Parkersburg, W. Va.
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Wagner Supply Company—Texas
Western Supply Company—Oklahoma
Western Drilling Tool & Supply Company—Kansas

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Factory: Beverly, New Jersey
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Stocks throughout the oil fields

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Worthy of Trust

Name and address—	Barrels
Central Oil & Gas Co., Tulsa	307
Central Petroleum Co., Tulsa	8,391
Central States Oil & Gas Co., Tulsa	1,852
Chalfant, C. C., trustee, Pittsburgh, Pa.	607
Chamberlain, H. G., Marietta, O.	267
Champlin Ref. Co., Enid	11,318
Champlin & Bass, Inc., Enid	18,346
Chandler Oil Co., Bartlesville	743
Cherokee-Warren Oil Co., Tulsa	2,746
Chestnut & Smith Corp., Tulsa	7,322
Chic-Osage Oil & Gas Co., Tulsa	246
Choctaw Oil Prod. Co., Tulsa	766
Choctaw Producing Co., Tulsa	65
Cimarron River Oil & Gas Co., Oklahoma City	2,278
Clarion Oil Co., Houston, Tex.	6,298
Clark, H. E., Okmulgee	9,386
Clark, Maurice G., Muskogee	548
Claymo Oil & Gas Co., Clayton, Mo.	436
Cleeton Oil Co., Cleveland	680
Cline Oil Co., Wichita Falls, Tex.	78
Clover, M. K. and L. G. Neely, St. Marys, O.	6,309
Cobb, Guy P., Ardmore	1,419
Cobb & Hollingsworth, Ardmore	362
Coe, R. W., Ardmore	1,622
Coe, R. W., trustee, Ardmore	15,298
Cohen, Aaron, Baltimore, Md.	936
Cohn, David, Chelsea	367
Coker, J. M., Claremore	200
Coline Oil Co., Oklahoma City	157,112
Collins, Ida M., and Ray M., Tulsa	525
Colpitt, C. R., Collinsville	556
Colson Oil Co., Tulsa	7,168
Columbia Pet. Co., Oklahoma City	1,740
Comar Oil Co., St. Louis, Mo.	2,901,672
Commonwealth Oil Co., Warren, Pa.	923
Commercial Drilling Co., Tulsa	3,826
Compton, O. W. et al. Independence, Kans.	314
Connely, E. A., Tulsa	1,553
Connelly, E. L., Tulsa	79
Connelly, E. L. et al, Tulsa	4,275
Connelly, G. W., Caney, Kans.	1,887
Conner, B. C., Tulsa	20
Constantine, C., Pawhuska	1,253
Continental Oil Co., Denver, Colo.	170,831
Continental Oil Co., Tulsa	11,526
Continental Oil & Ref. Co., Independence, Kans.	3,898
Continental Supply Co., St. Louis, Mo.	1,894
Coombs Oil, Gas & Land Co., Bartlesville	925
Cora Exploitation Co., St. Louis, Mo.	794
Corona Oil Co., (N. T. Gilbert, receiver), Tulsa	3,550
Coronado Oil & Gas Co., Cleveland	3,176
Correne Oil Co., Tulsa	1,559
Cortez Oil Co., Tulsa	22,784
Cory, John I., Okmulgee	975
Cory, M. S., trustee for E. M. Furdy, Tulsa	185
Cosden & Co., (Maryland), Tulsa	1,160
Cosden Oil & Gas Co., Tulsa	146,616
Cosden, J. S., Tulsa	2,253
Cotton Belt Pet. Co., (N. T. Gilbert, receiver), Tulsa	23,735
Cowles, La Monte, Burlington, Ia.	331
Craig, D. F., Independence, Kans.	118
Crawford, J. W. R. & Sons, Inc., Tulsa	331
Creekmore, C. B., Tulsa	415
Cremal Oil Co., Bartlesville	89
Creo Oil Co., Tulsa	10,966
Crescent Oil Co., Bartlesville	520
Cress, P. W., Atty., Perry	97
Crews Estate Oil & Gas Prod., Enid	23,124
Cronable & Hess, Claremore	281
Crosbie, Davis, Sloan & Sturm, Tulsa	1,746
Crosbie & Gillespie Gasoline Plant, Tulsa	3,292
Crosbie, Sturm & Davis, Tulsa	2,816
Crosbie Drilling Co., Inc., Olean, N. Y.	126
Crown Central Pet. Corp., Houston, Tex.	24,131
Cruce & Potter, Ardmore	1,041
Cruce-Smith-Cruce, Ardmore	1,979
Crude Oil Dev. Corp., Blackwell	629
Crump & Beard, Duncan	47,160
Cuckow, C. J., Steedman	476
Cudahy Oil Co., Cleveland, O.	30,179
Cumberland Pet. Co., Cleveland, O.	30,179
Curtis, W. L. Co., Elmira, N. Y.	139
Curtis & Aiken, Tulsa	149
Curtis, W. L. Co., F. M. Aiken, Inc. Elmira, N. Y.	1,344
Cusack, F. E., Okmulgee	1,314
Cushing Gasoline Co., Tulsa	6,934
Custer Oil Co., Okmulgee	930
D	
Daisy Belle Pet. Co., Ardmore	5,557
Dallas Co., Tulsa	4,219
Damme-Pringle Oil & Gas Co., Okmulgee	683
Damon Oil Co., Tulsa	2,128
Danciger Oil & Ref. Co., Tulsa	465
Daniels, H. V., Tulsa	292
Dannenburg, N. B., Chelsea	1,134
Dannenburg, Sarah E., Exec., Chelsea	200
Darby Pet. Co. of New York, Tulsa	831
Darby-Lynde Co., Tulsa	684
Davis, L. R., Tulsa	952
Davis, R. D., Cleveland	518
Davis, W. R., Caney, Kans.	350
D. C. F. S. & Co., Ardmore	955
Deems, H. C., Tulsa	535
Deep Fork Oil Co., Marietta, O.	2,077
Deep Rock Oil & Ref. Co., Tulsa	95,130
Deichman, Peter, receiver, Tulsa	548
Delaware-Cherokee Oil Co., Dewey	2,596
Delmar Oil Co., Bartlesville	155,022
Delna Oil & Gas Co., Muskogee	975
Delokee Gas & Oil Co., Bartlesville	1,147
De Long, R. J., Cleveland	275
Dempsey, John L., Oklahoma City	900
Dempsey, Kathryn T., New York, N. Y.	275
Dempsey Oil Corp., Oklahoma City	1,325
Denton, W. T., trustee, Muskogee	1,786
Denver Prod. & Ref. Co., Okmulgee	4,487
De Soto Gasoline Co., Houston, Tex.	1,490
De Vinna, M. A., Tulsa	455
Devonian Oil Co., Tulsa	169,731
Dewey Portland Cement Co., Dewey	657
Dickerson, O. W., Oil Co., Oklahoma City	177
Dierks, Fred H., trustee, Kansas City, Mo.	1,894
Dilley, W. Y., trustee, Waurika	1,711
Dixie Oil Co., Inc., Shreveport, La.	205,513

Name and address—	Barrels
Dixon, H O., Bartlesville	4,651
Doak, Jas., Cushing	205
Doak Bros., Cushing	137
Dock Oil & Gas Co., Bartlesville	707
Dodd, Wm. A., Tulsa	1,146
Dolman, L. S., Walter H .Gant and S. W. Tyer, Ardmore	9,841
Dominion Oil Co., Washington, D. C.	214
Donahoe, J. J., Ponca City	952
Donahoe, J. L., Tulsa	1,675
Donahoe, L. C. and F. S. Stryker, Ponca City	2,100
Donahoe, Mabel, Ponca City	952
Donahue, W. J., Bartlesville	128
Doris Oil & Gas Co., Tulsa	852
Douthitt, W. B., Duncan	90
Douthitt-Long-Kendrick, Duncan	700
Douthitt & Melton, Duncan	108
Dover Oil Co., Bartlesville	755
Dowell, B. G., Cisco, Tex.	57
D. & S. Oil Co., Tulsa	1,210
Duffey, H. M. and J. B. and Bessie A. Dye, Tulsa	1,512
Duffield, Lewis C., Tulsa	1,194
Duffield, L. C. & Co., Tulsa	3,398
Duffield, Berlin & Moore, Tulsa	568
Duffield & Howard Oil Co., Tulsa	3,609
Dunn, Blythe, Nowata	66
Dunn, S. J., Tulsa	172
Dunn Oil Co., Tulsa	245
Dunnington, A. S., Tulsa	925
Durham, Earl et al, Bristow	2,976
Dwyer, J. D., Tulsa	3,385
E	
Eagle Creek Oil & Gas Co., San Francisco, Calif.	2,440
Eagle-Picher Lead Co., Henryetta	4,672
Earl Oil Co., (Tim Cushing, agent), Bristow	1,017
Eartex Pet. Co., (E. S. Hall, receiver), Tulsa	125
Eason, T. T., Enid	231
Eastern Oil Co., Buffalo, N. Y.	37,007
Elling, L. R. & Co., Bartlesville	1,462
Echo Oil Co., Tulsa	25,688
Edgington, L. D., Hominy	210
Edwards, W. F., Pawnee	224
Eliza Tim Oil Co., Sapulpa	277
Elk Producing Co., Tulsa	497
Ellen Oil & Gas Co., Tulsa	475
Elliott, W. C., Tulsa	255
Elliott & Smith, Tulsa	26,760
Eliott & Vensel, Tulsa	7,706
Ellis, M., Tulsa	3,467
Elm Oil Co., Tulsa	13,215
Elmer Oil Co., Elmira, N. Y.	1,810
Emery Bros., Bradford, Pa.	2,783
Emery, Lewis, Jr., & Sons, Bradford, Pa.	11,067
Empire City Co., Tulsa	1,765
Empire Gas & Fuel Co., Bartlesville	185,072
Enfisco Oil Corp., Tulsa	10,778
Enid 80 Oil & Gas Co., Enid	648
Enterprise Transit Co., Titusville, Po.	3,768
Erton Oil Inv. Co., Pawhuska	2,035
Exchange National Bank, Tulsa	168
Exchange National Bank, Tulsa	1,495
F	
Fagar Oil & Gas Co., Garber	159,705
Faltinson, A., Tulsa	3,816
Fan-Elva Oil & Gas Co., Tulsa	3,063
Farmer, A. L. & A. E., Tulsa	83
Farren, C. F., Tulsa	5,929
Fay Drilling Co., Tulsa	128
Federal Oil Corp., Eureka, Kans.	112
Fee Oil Co., Muskogee	193
Fern Oil & Gas Co., Yale	8,412
Fewel, Green A., Muskogee	133
Fidelity Oil Corp., Louisville, Ky.	1,141
Fields Oil & Gas Co., Okmulgee	175
Fifty-Nine-Osage Oil Co., Bartlesville	38,226
Finance Oil Co., Pawhuska	25,201
Finance Oil Co. and Livingston Oil Co., Pawhuska	1,126
Finch, F. L., Tulsa	379
First National Bank, trustee, Coweta	305
First National Bank, Dewey	367
First National Bank, Haskell	111
Fisher Oil Co., Pittsburgh, Pa.	428
Fitzgerald, D. C., trustee, Ardmore	9,456
Fitzgerald, H. L., Tulsa	51
Fitzgerald & Withington, Tulsa	1,201
Flat Rock Oil Co., Tulsa	1,435
Fleming & Bedford, Chelsea	47
Flesher, W. J., Coweta	204
Foltz, J. M., Muskogee	485
Force Oil Co., Tulsa	341
Forster, S. F., Dallas, Tex.	1,119
Fort Ring Oil & Gas Co., Fort Worth, Tex.	5,856
Fortuna Oil Co., Dallas, Tex.	317,477
45 Oil Co., Chicago, Ill.	2,269
45 Oil Co. and E. S. Bell, Chicago, Ill.	4,717
Foster Investment Co., Tulsa	32,713
Foster Oil Corp., Bartlesville	338
Foster Pet. Corp., Bartlesville	33,567
Foster & Davis, Inc., Bartlesville	12,394
Fox, W. T., Sapulpa	2,389
Fox Pet. Co., Ardmore	6,506
Franchot, D. W. & Co., Tulsa	22,230
Francis, W. C., Skiatook	108
Franklin Oil Co., Franklin, Pa.	468
Franklin Oil & Development Co., Nowata	573
Franklin, Wirt, Ardmore	112,345
Freeland, D. M., Bristow	180
French, M. C., Okmulgee	182
French-Hawkins, Okmulgee	52
Funk, A. L., Tulsa	2,250
G	
Gaffney, H. E. estate, and H. B. Gaffney, Bradford, Pa.	2,012
Gaffney, H. E., estate and Olive Gaffney, Bradford, Pa.	1,080
Galbraith, H. H. et al, Independence, Kans.	1,928
Galvez Oil Corp., Tulsa	34,054
Gambill, G. D., Terre Haute, Ind.	2,299
Gamo Oil Co., Claremore	55
Gant, Walter H., Ardmore	5,826
Gardner, H. N., Tulsa	519
Gardner Oil Co., Tulsa	186
Gardner & Avery, Tulsa	227
Garnet Oil Co., Winfield, Kans.	2,972
Garrett, Robt. E., Tulsa	97
Gates Oil Co., Ardmore	39,764
Gates Oil Co., Ardmore	216
Gates-Cook Drilling Co., Okmulgee	572
Gatewood, Pearl A., Bartlesville	158
Geneva Pearl Oil & Gas Co., Ardmore	3,039

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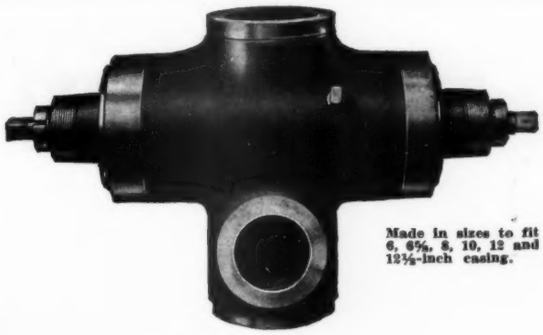
C.I.W. BLOWOUT PREVENTER



Made in sizes to fit 6, 6⅝, 8, 10, 12 and 12½-inch casing.

Will Make Your Well Absolutely Blowout-Proof Against the Highest Gas Pressure Ever Encountered in Oil or Gas Well Drilling—

The Cameron Blowout Preventer on your well permits drilling operations to be carried on until the gas sand is struck, allows you to drill into it as far as the weight of mud and tools can overcome the pressure. It then can be closed around the drill stem and guaranteed to hold any pressure yet encountered in well drilling. The well can be brought in without pulling the drill stem and resetting casing.

Tested and Guaranteed to Hold 2,000 Pounds Clear Cold Water Pressure

Its exclusive patented packing is so designed that the heavier the gas pressure—the tighter the pack.

Built entirely of steel; rams interchangeable for the different size drill stem or casing used.

Contains no gaskets, flanges, lead, babbitt or bolts to give way under pressure.

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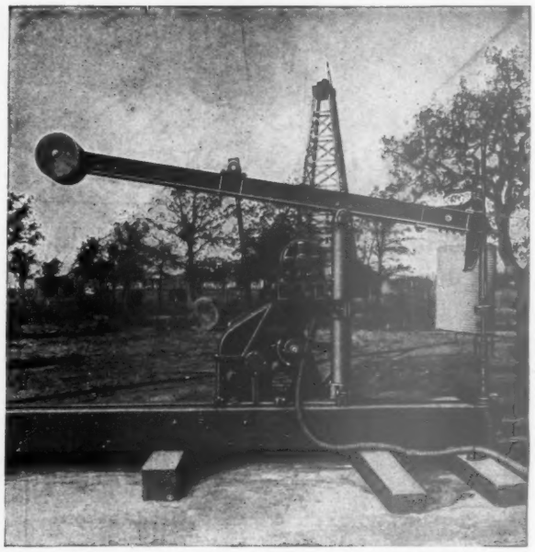

The New Oil Well Pumping Jack

The "American" Totally Enclosed Oil Well Pumping Jack has been designed in answer to the demand for the efficient pumping of individual oil wells.

American Jacks are made in three sizes—12-inch to 15-inch stroke, 15-inch to 18-inch stroke and 18-inch to 22-inch stroke. All gears are totally enclosed and run in a bath of oil which floods the bearings, insuring smooth operation and long life. The head proper may be disengaged from the cable and swung back from the walking beam, permitting the rods to be pulled without moving the jack itself. There are no screw mechanisms or adjustments necessary. No gears are exposed. Compact, sturdy and economical in operation!

Ask for Bulletin 181

Agent: C. S. CARTER, Box 1511, Tulsa, Okla.

GENERAL OFFICES AND WORKS - AURORA, ILL.
THE AMERICAN WELL WORKS
BRANCH OFFICES

Name and address—	Barrels
Genevra Oil Co., The, Bartlesville	598
Georgia Oil & Gas Co., Copan	2,078
Getty, Geo. F., Tulsa	694
Gibson, E. L. and Gibson-Zahniser Oil Corp., Tulsa	6,578
Gibson-Zahniser Oil Corp., Tulsa	4,578
Giddings, F. C., A. B. C. Dague, Tulsa, and Chas. F. Egan, Denver, Colo.	958
Gilchrist, H. M. estate, Bartlesville	1,042
Gilcrease Oil Co., Tulsa	22,217
Gill, A. J., Okmulgee	150
Gillespie, F. A., & Sons Co., Tulsa	37,211
Gillespie, Joe, Coffeyville, Kans.	80
Gillette, J. N., Tulsa	2,187
Gilliland, Vera C., Tulsa	1,800
Gilliland Oil Co., Tulsa	81,365
Gilmer Oil Co., Lamine, Mo.	54
Gilmer Oil Co., The, Ardmore	33,084
Glass & Harmon, Nowata	7,880
Glass, Reed & McSpadden, Nowata	247
Gled Oil Co., Tulsa	10,748
Glidden, H. P., Tulsa	471
Glidden Oil Corp., Tulsa	4,294
Goddard, C. B., Ardmore	1,820
Godfrey, F. L., Enid	948
Goforth, W. A., receiver, Meridian Petroleum Corp., Tulsa	26,558
Goldie Oil & Gas Co., Kansas City, Mo.	750
Gooch Lease Oil Co., The, Woodsfield, Ohio	375
Gorman, M., trustee, Ardmore	896
Gordon, Mary Louise, Beverly Hills, Calif.	1,197
Gorton Trust, The, Cement	7,711
Graham Mineral Trust, Ardmore	2,762
Grand Duke Producing Co., Muskogee	603
Gray Oil Co., Tulsa	4,371
Green, W. B., Oklahoma City	583
Grenewalt, H. L., Okmulgee	267
Greenfield Trust, Rock Island, Ill.	1,033
Gregg, C. O., Ardmore	4,626
Grieves, John B., Bartlesville	20,589
Griffin Producing Co., The, Tulsa	2,826
Grimes, W. Baker, Tulsa	275
Grimes, Blair et al, Tulsa	354
Grimes, Elliott & Blair, Tulsa	66
Grimes, Elliott et al, Tulsa	167
Grimes & Gillespie, Tulsa	30,263
Guardian Oil Co., Inc., Tulsa	8,318
Gypsy Oil Co., Tulsa	1,983,608
H	
Haas, J. G., Okmulgee	1,175
Halden Oil Co., Tulsa	614
Hales, W. T., Oklahoma City	83,100
Halfast, E. W., Muskogee	246
Hall, John M., Tulsa	128
Hall & Lucas, Tulsa	520
Halsell & Son Oil & Gas Co., Vinita	2,274
Hambro Oil Co., St. Louis, Mo.	6,434
Hamburger Bros., New York, N. Y.	53
Hamilton, W. R., Dewey	1,076
Hammat, D. M. & Co., Tulsa	719
Hamon & Colcord, Ardmore	12,993
Hancock, N. M., Shreveport, La.	191
Hancock, W. E., Tulsa	60
Haner, J. L., Muskogee	1,139
Haney, N. B., Ada	672
Haney and H. C. Ewers & Sons, Peru, Kans.	208
Hannis Oil Co., Tulsa	213
Harland Oil Co., Wolco	26,322
Harlin, E. C., et al, Welch	112
Harmon, C. C., Nowata	1,821
Harmon, W. J., et al, Okmulgee	3,445
Harold Petroleum Co., Blackwell	11,613
Harrington, Lillian F. No. 4, Tulsa	368
Harrington, Lillian F. No. 5, Tulsa	204
Harrington, W. J., Coffeyville, Kans.	2,594
Harrington, W. M., Marietta, Ohio	158
Harris, Lucinda C., Rising Sun, Ind.	436
Harris & Haun, Inc., Blackwell	970
Harris-Hays Co., Okmulgee	984
Harris-Strawn Oil Co., Ardmore	3,356
Hartley & Suggs, Eldorado Springs, Mo.	254
Hartman & Mann, Pittsburgh, Pa.	161
Hartz, Ben, Baltimore, Md.	296
Harwell, E. P., Tulsa	10,214
Haskell, F. K., Bartlesville	106
Haskell, F. K., trustee, Bartlesville	5,443
Haskogee Oil & Gas Co., Haskell	325
Hastings, W. T., Marietta, Ohio	373
Hatch, G. W., Nowata	192
Hayden, Hayward, Tulsa	478
Hayes, Elizabeth R. Crockett, Oklahoma City	20,375
Hayner Petroleum Co., Tulsa	794
Hays Oil Co., The, Oil City, Pa.	610
Haslett, A. G., Morris	1,085
Hazlett, Bradford & Frazier Bros., Eldorado, Kans.	2,274
H. C. W. Oil Co., Chelsea	430
Healdton Oil & Gas Co., Enid	70,026
Healdton Field Oil Co., Fort Worth	1,087
Hector Oil Co., Bartlesville	12
Heenan, J. A., Ardmore	1,622
Hefner, R. A., Ardmore	927
Heggem & Davis, Tulsa	1,412
Helena Oil & Gas Co., Tulsa	11,274
Heller, M. A., Okmulgee	1,488
Henderson Co., The, Tulsa	113
Henderson & Holden, Eldorado, Kans.	738
Hennessey, J. E., Okmulgee	1,067
Henry, J. W., Tulsa	5,300
Henry & Avers, Inc., Tulsa	829
Henry, Winston P. Special, Tulsa	1,351
Henry Oil Co., The, Tulsa	10,750
Henton, E. L., et al, Chelsea	1,434
Henton & Weible, Chelsea	461
Hertzel, F. E., Warren, Pa.	1,826
Hewitt Mineral Trust, Ardmore	1,236
Hibbard, S. B., S. S. Glasscock and John R. Hammond, trustee, Kansas City, Mo.	854
Hickernell, G. W., Taft, Calif.	501
Higgins, J. R., Tulsa	48
Higrade Petroleum & Gas Co., New York, N. Y., and Knupp Oil Corp., Warren, Pa.	826
Highway Oil Ref. Corp., Tulsa	4,247
Hillside Oil Co., Tulsa	2,850
Hilltop Oil Trust, Ardmore	3,793
Hilt, John H., Frank, Ben and L. E. Dorman, Tulsa	1,681
Hinerman & Marshall, Tulsa	3,963
Hinkle, Fitzgerald & Westheimer, Ardmore	3,650
Hippodrome Oil Co., Tulsa	529
Hitchner, W. B., trustee, Robinson, Ill.	276
Hivick, J. P. and L. C., Ardmore	261
Hockensmith, R. A., Okmulgee	525
Hoffer Oil Corp., Fort Worth, Tex.	10,523
Hoge, J. B., Nowata	357
Hollis, Elsie B., Los Angeles, Calif.	134
Holman, Shirley, Long Beach, Calif.	313
Holmes, B. F., Lyons, Kans.	525
Holmes Oil Co., Tulsa	7,949

Name and address—	Barrels
Holmes, Coombs & Chapman, Bartlesville	675
Homaokla Oil Co., Oklahoma City	24,538
Home Gas Co. of Cushing, Cushing	13,665
Hope Petroleum Co., Tulsa	2,569
Hornecker, Henry, Tulsa	603
Hornecker & Graham, Tulsa	341
Hornecker & Hagler, Tulsa	2,072
Hornecker, Miller & Dunigan, Tulsa	244
Horner, W. H., Cleveland	284
Horton, F. J., Iola, Kans.	242
Houser, M. A., trustee, Tulsa	425
Howard Petroleum Corp., Tulsa	373
Howard, Duffield & Berlin, Tulsa	6,356
Huckleberry, J. H., No. 5, Kansas City, Mo.	22
Huddleston, C. T., Okemah	1,168
Hudson Oil Co., Wellsville, N. Y.	165
Hudson, Grimes et al, Tulsa	426
Hughes, R. A., estate, Cygnet, Ohio	1,172
Hughes, R. A., estate, Getta Solether and Ora Brecht, Cygnet, Ohio	760
Hughes & Schwyn, Cygnet, Ohio	403
Hughes-Stone Co., The, Tulsa	2,653
Hughes, T. J., Cushing	4,225
Hulen, H. E., Bartlesville	826
Hulings, F. W., Harlingen, Tex.	612
Hulings, F. W., trustee, Harlingen, Tex.	118
Hulings, M. C., Tulsa	134
Hull, J. A., Tulsa	177
Hull, J. A., Co., Tulsa	27,555
Humble Oil & Ref. Co., Houston, Tex.	308,757
Hummel, Chas. S., Chelsea	93
Hunt & Grastorf, Colorado Springs, Colo.	1,088
Hurdle, H. J., Mounds	174
Hutchinson, E. A., Oil Co., Muskogee	301
I	
Ideal Royalty Co., Tulsa	1,728
Illata Oil Co., Vinita	130
Illinois Oil Co., Chicago, Ill.	1,518
Illinois-Okla. Petroleum Corp., Duncan	7,807
Illinois Refining Co. (H. G. Beard, U. S.), Cushing	7,288
Imo Oil & Gas Co., Covington	21,262
Independence Oil Co., Bartlesville	960
Independent Oil Co., Tulsa	383,260
Indiahoma Corp., The, Okmulgee	11,128
Indian Territory Illuminating Oil Co., Bartlesville	132,545
Indiana Oil & Gas Co., Tulsa	33,329
International Supply Co., Tulsa	835
Interocean Oil Co., Tulsa	37,772
Interstate Oil & Gas Co., Bartlesville	3,840
Invader Oil Corp., Muskogee	3,170
Iowa Oil & Ref. Co., Hawarden, Iowa	2,134
Irelan, O. M., Sapulpa	11,278
Iron Mountain Oil Co., The, Tulsa	60,634
Irvine, James, Sapulpa	249
Irwin, John S., Bartlesville	700
Irwin-Miller, Bartlesville	659
J	
Jackson, L. B., Sapulpa	2,719
Jackson, Wise & Bovaird, Sapulpa	2,634
Jackson, Wise & Markham, Sapulpa	4,316
Jackson, Wise & Snedden, Sapulpa	2,035
Jackobs, Leo, St. Louis, Mo.	4,440
Jackson, S. G., & W. S. Cline, Kaw City, Okla.	1,140
Jacques, Denton, Arkansas City, Kans.	876
Jacques, Effie M., Arkansas City, Kans.	876
Jane Oil Co., Oil City, Pa.	2,087
Jankowsky, Mose, Tulsa	2,067
Jeff Oil Co., Chelsea	356
Jeffrey, E. B., trustee, Oklahoma City	2,348
Jelinek, John, Nowata	259
Jennie Oil Co., Chelsea	178
Jennings, E. H., Bros Oil Co., Pittsburgh, Pa.	2,856
Jennings, R. G., Pittsburgh, Pa.	12,278
Jennings, R. G., Snowden & McSweeney Co., New York, N. Y.	2,530
Jens Marie Oil Co., Ponca City	1,383
Jenson, H. A., Tulsa	400
Jenson, P. W., Chelsea	180
Jewel Oil & Gas Co. (P. J. Long, trustee), Tulsa	156
Jim-Glenn Oil Co., Tulsa	4,581
Johneda Oil Co., Tulsa	22,550
Johnson, Mrs. C. L., Kansas City	80
Johnson, C. O., Ponca City	175
Johnson, W. J. (by Tidal-Osage Oil Co.), Tulsa	710
Johnson Oil & Ref. Co., Chicago, Ill.	8,175
Johnson Farm Oil Co., Warren, Pa.	1,110
Johnston, T. A., & Co., Okmulgee	433
Josey Oil Co., Tulsa	331,423
Judson Oil Co. (N. T. Gilbert, Receiver), Tulsa	1,565
K	
Kahle, Clyde, Cyril	950
Kaneta Oil & Gas Co., The, Hutchinson, Kans.	475
Kano Oil Co., Nowata	230
Kansas-Okla. Cons. Oil Co., Minneapolis, Minn.	593
Karcher & Henry, Tulsa	90
Katz, B. S., Sapulpa	975
Katy Oil & Gas Co., Bartlesville	1,176
Kaw Petroleum Co., Tulsa	122
Kay & Kiowa Oil Co., Tulsa	21,625
Keener Oil & Gas Co., Tulsa	43,287
Keeter, J. A., Tampa, Fla.	399
Keith, J. H., Coffeyville, Kans.	449
Kell, Frank, G. G. Kemp and Edward Schlaffke, Electra, Tex.	1,334
Kelly, Thos. C., Sapulpa	612
Kelly, T. G., trustee, Sapulpa	2,250
Kenneddy, J. L., and S. G., Tulsa	1,824
Kennedy, S. G., et al, Tulsa	153
Kerull Oil Co., Tulsa	2,950
Kewanee Oil & Gas Co., The, Tituasville, Pa.	124,356
Keystone Oil & Gas Co., Independence, Kans.	137
King Bros., Tulsa	1,605
King, F., et al, Okmulgee	986
King, John, receiver, Tulsa	3,111
King, John, receiver, Tulsa	18,851
King & Harrington, Tulsa	42
Kingsbury, C. W., Tulsa	438
Kingsley, W. L., Kansas City, Mo.	128
Kinney, Geo., trustee, Tulsa	400
Kinney, Geo. W., Tulsa	438
Kinney-Wood-McIntyre, Tulsa	203
Kingwood Oil Co., Okmulgee	39,977
Kirk Oil Co., Ardmore	24,448
Kistler, Earnest L., Tulsa	4,264
Kistler Petroleum, Tulsa	10,855
Kline & Brann, Inc., Tulsa	4,208
Knappenberger, D. L., Sapulpa	100
Knappenberger, W. B., Tulsa	110
Knox Petroleum Co., Ardmore	6,241
Knupp Oil Corp., Warren, Pa.	442
Koberling Oil Co., Tulsa	410
Kohlenberg, W. C., Sapulpa	485

DEPEND UPON SULLIVAN OIL FIELD EQUIPMENT

Heavy Duty Sullivan Diamond Drill set to bring in a well at 2,150 feet, Mexican Field

A Six-inch Sullivan Drill Core

Sullivan Diamond Core Drills

have become a recognized method of oil drilling the world over, highly valued for accuracy, low cost and ability to complete the hole to the depth desired, under any conditions.

There are portable diamond drills for structure testing, and heavy duty diamond drills for deep work (up to 7,000 feet). *Catalog 1580-O.*

Portable Hoists, (air or electric) are widely used for storage tank construction, and are adapted to many other oil field uses. *(Bulletin 1576-F.)*

Portable Air Compressors are built in several sizes (110, 170, 220, 320 cubic feet), and with a variety of mountings, for many oil field purposes. *(Send for pictorial booklet "Speed Up With Air.")*

Sullivan Air Compressors and dry vacuum pumps are available for any production or refinery needs. They represent over 25 years of experience in the air power field. Catalogues on request.

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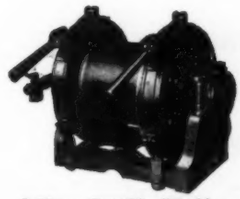
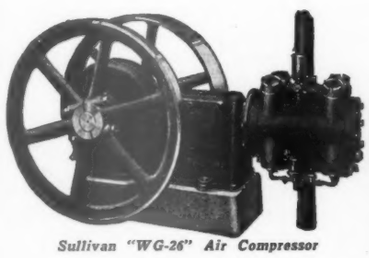
secured by Sullivan Diamond Drills is a complete, exact record of all strata penetrated. It leaves nothing to guesswork.

Special coring rigs are available for use with rotary equipment. Buy your core outfit from us. We have 50 years' experience.

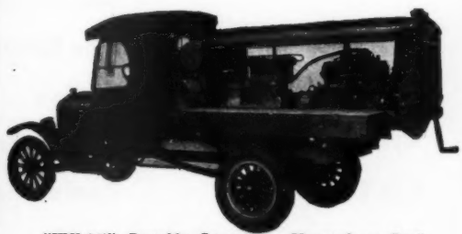


Sullivan Portable "Turbinair" Hoist



Sullivan "WG-26" Air Compressor

This picture shows a Turbinair Hoist handling 5x20 plates, weighing 2,000 lbs. each in building 18 55,000-barrel storage tanks for the Standard Oil Company of New York, at Tappan, New York.



"WK-312" Portable Compressor Mounted on Ford One-Ton Truck

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Petroleum Products

HIGH GRADE UNIFORM QUALITY

Gasoline	Greases
Kerosene	Cup Greases
Fuel Oils	Gear Greases
Bunker Oils	Gear Lubricants
Diesel Fuels	Axle Greases
Signal Oils	Wire Rope Lubricants
Miners Oils	Pale Oils
Gas Oil	Red Oils
Distillates	Black Oils
Spindle Oils	Floor Oils
Motor Oils	Waxes
Engine Oils	Asphalts
Dynamo Oils	Road Oils
Machine Oils	Asphalt Cement
Cylinder Oils	Pipe Coating
Cylinder Stocks	Roofing
Car Oils	Roofing Paper
	Roofing Cement

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NEW YORK 17 Battery Place — **CHICAGO** McCormick Bldg. — **HOUSTON** The Texas Co. Bldg.

Offices in Principal Cities

Export Dept.: 17 Battery Place, New York City

Name and address—	Barrels
Kuhns, Jas. H., estate, Tulsa	706
Kuper, John C., Caney, Kans.	282
L	
Lackawanna Prod. & Ref. Co., Scranton, Pa.	444
Lackey, Frank O., Wilmington, Del.	775
Lahman Bell Oil Co., Dewey, Okla.	297
Lambert, E. J., Tulsa	2,273
Lambert Oil & Gas Co., Tulsa	5,336
Lamberton, J. S., Tulsa	681
Lancaster & Grimes, Tulsa	331
Landon, A. M., Independence, Kans.	10,582
Lane, E., Nowata	2,018
Lane Oil Producing Co., Chicago, Ill.	2,403
Lane & Wasson Co., Ardmore	3,456
Large Oil Co., Bartlesville	4,390
Larkin, C. L., Bartlesville	739
Larkin, J. J., Tulsa	543
Larkin Oil Co., Tulsa	70
Larkin & Reynolds, Bartlesville	2,600
Lashley, Theo. G., Boulder, Colo.	275
Lasoya Oil Co., Altoona, Pa.	1,646
Latonia Oil Co., Tulsa	491
Laurel Oil & Gas Co., Tulsa	92,677
Lawson, E. B., Nowata	9,161
Lawson & Griffin Prod. Co., Nowata	206
Lawson & Whitehill, Nowata	1,478
Lawton Corp., Oklahoma City	847
Lea Drilling Co., Tulsa	412
Leahy Oil Co., Tulsa	1,829
Leard, J. K., Tulsa	1,110
Le Bosquet, Mary E., Tulsa	291
Lebow, C. H., Tulsa	11,295
Le Fever, M. H., Marietta, Ohio	590
Lemons, Geo. H., estate, Tulsa	46
Leonard, J. M., Joplin, Mo.	1,035
Leonard Petroleum Co., Washington, Pa.	438
Leopold & Brett, Muskogee	189
Lesh, Eula, Guthrie	250
Lesh Bros. Oil Co., Wichita Falls, Tex.	1,858
Levant Oil Co., Ardmore	3,562
Lewis Oil Co., Pittsburgh, Pa.	154,835
Lewis-Clarke Petroleum Co., Oklahoma City, Okla.	4,252
Liberty Oil & Gas Co., Warren, Pa.	2,082
Liebert, Al, Coffeyville, Kans.	315
Liebert, F. F., Tulsa	84
Lightning Creek Oil & Gas Co., Wellsville, N. Y.	304
Lima Oil & Gas Co., Bartlesville	3,929
Lincoln Oil & Gas Co., Tulsa	2,240
Link Oil Co., The, Tulsa	27,405
Lippa, Arthur, Tulsa	135
Little Fay Oil Co., Tulsa	19,681
Loar, W. N., & Co., Okmulgee	3,034
Local Oil Co., Warren, Pa.	1,219
Lomore Oil Co., Ardmore	2,908
Lone Star Gas Co., Dallas, Tex.	38,463
Louis, F. I., Tulsa	60
Louisiana Oil Corp., Shreveport, La.	6,964
Love, L. H., Ardmore	3,088
Louvain Oil Co., Bartlesville	1,642
Lovell, Dot L., Marietta, Ohio	1,011
Lovell, J. A., Marietta, Ohio	411
Lovett Oil Co., Nowata	1,515
Lowrie, A. L. and F. B. Barnes, Robinson, Ill.	1,435
Lowry Oil Corp., Wichita Falls, Tex.	3,164
Lowry Burns Corp., Wichita Falls, Tex.	533
Lucky Leaf Oil & Gas Co., Blackwell	1,435
Lucky Scott Oil & Gas Co., Independence, Kans.	1,082
Ludey, Chas. A., Marietta, Ohio	2,694
Ludowici-Celadon Co., Chicago, Ill.	6,811
Luengene, C. H., Tulsa	1,175
Lutner, Thos. E., Lawton	545
Lynch, C. B., & Co., Tulsa	741
Lynch & Baker, Tulsa	1,365
Lyon, Burt W. and Mary J., Los Gatos, Calif.	690
Lyon-Leonard Oil Co., Los Gatos, Calif.	165
Lyon & McKeever, Los Gatos, Calif.	140
Lyons, J. and L., Tulsa	1,777
Mc	
McAllister, C. T., Sapulpa	44
McBride, Mary I., Tulsa	387
McBride, W. C., Inc., St. Louis, Mo.	9,276
McClintock, H. H., et al, Bartlesville	1,941
McClintock, R. Otis, Tulsa	490
McConnell, Grace M., Oklahoma City	134
McCormick, J. A., trustee, Muskogee	1,075
McCready, C. H., Tulsa	807
McCulloch, J. W., Okmulgee	34,219
McDonald, B. P., Pawhuska	193
McDonald, J. H., Muskogee	206
McDonnell, John W., Tulsa	367
McDougal, D. A., Sapulpa	178
McFarlin & Chapman, Tulsa	277
McGill, A. L., Bartlesville	776
McGill, H. R., Tulsa	1,097
McGill, H. R., and Ruth Gilbert, Tulsa	1,504
McGill, J. R., Depew	230
McGraw, J. J., Tulsa	1,785
McGraw-Baughman-Bearly Lumber Co., Tulsa	259
McGuire, F. H., Guthrie	375
McKay, Margaret C., Sapulpa	919
McKeon, P. G., Tulsa	734
McKee Oil & Gas Co., Ardmore	1,734
McKinley, Geo. J., Tulsa	69
McLane Farm Oil Co., Tulsa	819
McMahan, Jas., Bushyhead	150
McMahon, C. L., Okmulgee	2,174
McMahon, C. L., Inc., Okmulgee	53,440
McMahon, C. L. and Kennedy, trustees, Okmulgee	13
McMahon, J. L., Wichita Falls, Tex.	86
McMan Oil & Gas Co., Tulsa	89,305
McMasters, D. H., trustee, Okmulgee	387
McMechan, W. F., Tulsa	2,313
McMillan, W. J., Cleveland	269
McOwen, Bernard estate, Buffalo, N. Y.	1,738
McPherson, D. J., and Beulah Wirt	328
McQueen, I. R., Oklahoma City	11,292
McSpadden, T. R., Nowata	152
M	
Mack Oil & Gas Co., Bartlesville	570
Madden & Madden, Tulsa	4,930
Magnolia Petroleum Co., Dallas	2,212,618
Magnolia Petroleum Co. for Union Petroleum & Supply Co., Dallas, Tex.	19,914
Maire Bros. & Ebling, Bartlesville	2,237
Majestic Oil, Gas & Ref. Co., DuQuoin, Ill.	793
Makeever Bros., Boston, Mass.	1,678
Mallory, J. F., and J. W. Stewart, Parkersburg, W. Va.	417
Malloy, Pat, Tulsa	407
Mancill, H. E., Bartlesville	1,218
Marcus, B. M., Olean, N. Y.	126
Margay Oil Corp., Tulsa	86,529
Margulies, Larry J., Tulsa	700
Marietta Oil Co., Marietta, Ohio	1,696
Marileen Oil & Gas Co., Blackwell	1,975
Mark, Clayton, Muskogee	385
Markham, J. H., Jr., Tulsa	47,069
Marland Oil Co. of Oklahoma, Ponca City	973,431
Marland Refining Co., Ponca City	1,560,339
Marshall Oil Co., Nowata	192
Marshall Oil Co., Tulsa	173
Martin, C. G., Bristow	1,975
Martin, J. E., Tulsa	1,189
Martin, L. J., Tulsa	282
Martin, R. B., receiver, Tulsa	494
Martin, R. B., receiver, Tulsa	370
Martin, S. A., Oil & Gas Co., Chelsea	790
Mason, D. B., Tulsa	10,908
Mason, Allen and Newton C. Fassett, Elmira, N. Y.	160
Mason-Beauchamp Oil Co., Tulsa	65
Massey, Alexander, Kansas City, Mo.	328
Matteson, Chas. D., St. Paul, Minn.	465
Maud Oil & Gas Co., Oklahoma City	1,530
Maxson, E. E., Owasso	3,550
Maxwell, D. G., Bartlesville	707
Maxwell & Irwin, Bartlesville	207
Maxwell & Patchen, estate, Bartlesville	479
Maxwell & Thompson, Bartlesville	1,077
May, Max, Tulsa	20
Meadors, Frank Jr., Wetumka	572
Mechling, C. A., Tulsa	236
Mechling & Berlin, Tulsa	661
Meridian Oil Co., Inc., Jennings, La.	203
Merrick, F. W., Ardmore	19,750
Merrick, F. W., and R. W. Coe, trustees, Ardmore	24,055
Merrick, Ward S., Ardmore	1,614
Merrick, Ward, et al, Ardmore	1,812
Messner & Clough, Bartlesville	743
Metzger, W. J., Muskogee	160
Mexada Oil Co., Ardmore	3,087
Midco Oil Corp., Tulsa	26,756
Mid-Continent Petroleum Corp., Tulsa	1,420,094
Middleton, H. B., Tulsa	287
Middleton, H. B., et al, Woodsfield, Ohio	146
Mid-Kansas Oil & Gas Co., Findlay, Ohio	300,431
Midland Oil Co., Bartlesville	98,525
Midland Securities Co., Tulsa	8,327
Mid-Union Drilling Co., Duncan	300
Miles Oil Co., Tulsa	822
Milroy Petroleum Co., Duncan	317
Minnehoma Oil & Gas Co., Tulsa	80,550
Minshall, E. R., Tulsa	9,073
Minshall, E. R., & Co., Tulsa	4,232
Minshall Oil & Gas Co., Tulsa	2,618
Misener, F. D., Tulsa	11,787
Mission Oil Gas & Ref. Co., Santa Barbara, Calif.	46
Mitchell & Jenal, Tulsa	244
Mitchell, Mark D., & Co., Independence, Kans.	792
Michell & Murrow, Independence, Kans.	224
Modern Oil Co., Wellsville, N. Y.	1,339
Moellendick, M. J., Wichita, Kans.	125
Mohawk Petroleum Co., Tulsa	2,667
Monroe, J. E., Tulsa	1,122
Monte Cristo Oil Co., Tulsa	470
Montezuma Oil Co., Tulsa	695
Moon Gasoline Co., Tulsa	233
Moore, Clint, estate, Tulsa	16,781
Moore, Frank L., Tulsa	3,884
Moore, J. B., Ardmore	450
Moore, John T., Muskogee	104
Morrison, Jas. B., Tulsa	481
Morrison & Jackson, Sapulpa	3,238
Morton & Co., Bartlesville	27,396
Morton Oil & Gas Co., Pittsburgh, Pa.	156
Morton Petroleum Co., Bartlesville	1,674
Moseley, C. F., Bartlesville	3,104
Moseley, W. H., Bartlesville	640
Mosier, John H., trustee, Muskogee	187
Mountain Fork Oil Co., Okmulgee	3,177
Mountain State Oil Co., Bartlesville	34,981
Mudge Oil Co., Pittsburgh, Pa.	18,321
Mullendore, Bessie, Cleveland	275
Mullendore, E. C., Cleveland	310
Mullendore, R. F., Hominy	95
Mullendore & Moore, Cleveland	500
Murphy Oil Co. of Pennsylvania, Philadelphia, Pa.	119
Murry, John Y., trustee, Tulsa	305
Murray Bros., Cleveland	1,740
Muskogee Oil Corp., Muskogee	414
Mussellem, M. S., Muskogee	307
Myers, C. N., Tulsa	951
Myers Oil & Gas Co., Tulsa	281
Myers & Twichell, Okmulgee	5,697
N	
Nadel, I., Tulsa	648
Nadel, Sophia, Tulsa	1,637
Nadine Oil Co., Cleveland	1,767
Nancy Oil Co., Sapulpa	110
National Oil & Dev. Co., Tulsa	9,364
National Supply Co., Midwest, Independence, Kans.	155
National Union Oil & Gas Co., Blackwell	7,998
New Pocahontas Oil & Gas Co., Oklahoma City	225
Neubeck, W. L., Marietta, Ohio	320
New Bomont Petroleum Co., Chelsea	125
New England Oil & Pipe Line Co., Boston, Mass.	47,978
New Haven Oil Co., Bartlesville	3,350
Newman, Wm. C., Okmulgee	110
Nicaragua Oil Co., Freeport, Ill.	1,567
Niece, Chas. B., Tulsa	327
Night & Day Oil Co., Lawton	258
Noble Oil & Gas Co., Tulsa	7,688
Noble, Lloyd, and A. O. Olson, Ardmore	1,180
Noble-Olson et al, Ardmore	8,352
Nolan, D. D., Robinson, Ill.	60
Nolan-Jackson, Sapulpa	993
Norman, Theo. A., Tulsa	126
Northland Gasoline Co., Tulsa	3,221
Norwood Oil Co., New York, N. Y.	10,402
Nowata Oil & Ref. Co., Tulsa	18,951
Number One Oil Co. (N. T. Gilbert, receiver), Tulsa	3,293
Nyanza Refining Co., Ardmore	1,272
O	
Obins & Weber, Bartlesville	2,184
Obins, W. G., and H. C. Weber, Bartlesville	10,992
O'Brien, P. J., Tulsa	338
O'Connor, Dennis & Sara, Butler, Pa.	290
Octo Oil Co., Bartlesville	288
Oglesby, Robert, Tulsa	3,950
Ohio-Osage Oil Co., Hominy	5,536
O'Hornett, Carl J., Henryetta	895
Oil State Petroleum Co., Enid	17,619
Okeh Oil & Ref. Co., Tulsa	212
Okisken Oil Co., Binghampton, N. Y.	1,384
Okla-Penn Oil Co., Bartlesville	1,126
Okla-Texas Ref. Co. (L. L. Masey, receiver), Grandfield	10,982
Oklausa Oil Co., Jackson, Tenn.	226
Oklavania Oil Co., Tulsa	23,098
Oklilana Oil Co., Tulsa	4,910

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KEEPING pace with the development of the oil industry, Prescott engineers have been conspicuous in the solutions of hundreds of individual pumping problems. Not only has this accumulated experience been a guide in the refinement and perfection of Prescott-Menominee Pumps, but it is also at the disposal of operators having need for improved pumping facilities. Wherever there is oil to be pumped Prescott is the logical source of engineering help. Prescott-Menominee Pumps are built in a range of sizes from small field units up to the largest main line station types.

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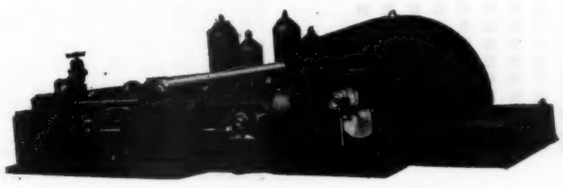


PHILLIPS PETROLEUM COMPANY

General Office

BARTLESVILLE, OKLA.

Absorption Gasoline

Grade A Double A

Grade B Double B

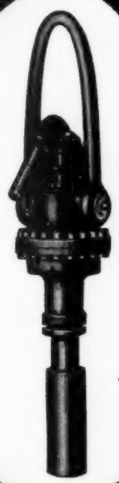
Grade C

Plants located throughout Oklahoma, Louisiana and Texas

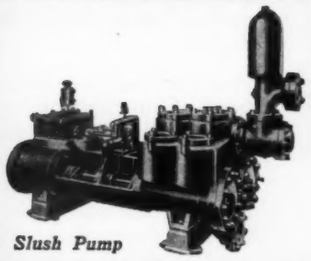
Name and address—	Barrels
Olsan Petroleum Co., Bristow	265,081
Oliphant Petroleum Co. (N. T. Gilbert, receiver), Tulsa	1,577
Olsen, Mrs. A., Drumright	683
Omega Oil Corp., Shreveport, La.	679
Oneida Petroleum Co., Warren, Pa.	5,105
O'Reilly, J. T., and Emma J., Tulsa	249
O'Rourke, Ed, Tulsa	1,783
O'Rourke, E. W., Tulsa	1,783
O'Rourke, Tom, Tulsa	1,783
Osage Development Co., Bartlesville	7,396
Osage Arrow Oil Co., Ponca City	1,835
Osage Allegheny Oil Co., Bartlesville	190
Osage Producing & Ref. Co., Bartlesville	3,662
Oswego Petroleum Co., et al, Tulsa	1,693
Ottawa Oil Co., Wellsville, N. Y.	228
Overton, C. H., estate, Tulsa	1,025
Owens, D. R., Chandler	4,005
Owl Oil Co., Loco	17,868
P	
Page, Chas., trustee, Tulsa	9,759
Page Bros. Oil Co., Tulsa	24,881
Painter, J. W., Nowata	342
Painter, Stager & Higgins, Nowata	877
Panama Oil & Gas Co., Holdenville	1,017
Panhandle Refining Co., Wichita Falls, Tex.	1,104
Panther Oil & Dev. Co., Bartlesville	165
Papoose Oil Co., Tulsa	160,091
Paraffin Oil Co., The, Houston, Tex.	9,552
Paragon Oil Co., Tulsa	5,907
Parker, D. C., trustee, Okmulgee	521
Parmenter, L. C., trustee, Muskogee	1,757
Parmenter, W. L., Lima, Ohio	1,934
Parmenter, W. L., No. 2, Dewey	339
Parrish Oil Co. and Reed, Nowata	2,305
Patsy Oil & Gas Co., Ardmore	2,364
Patterson & Swain, Bartlesville	225
Pattison Oil Co., Tulsa	2,750
Pattrell, E., Bartlesville	141
Pauline Oil & Gas Co., The, Oklahoma City	7,207
Paxton Oil & Gas Co.-Thedora Oil & Gas Co., Tulsa	306
Pawnee-Osage Oil & Gas Co., Tulsa	2,617
Peer Oil Corp., Tulsa	2,347
Pelham Petroleum Co., Tulsa	1,539
Penmar Oil & Gas Co., Okmulgee	7,460
Penna. Oil Corp., Warren, Pa.	470
Pennok Oil Corp., Tulsa	107,871
Penrod-Thompson et al, Okmulgee	2,110
Pensy Oil Corp., Tulsa	298
Perkins, F. E., Tulsa	1,496
Perkins, J. J., Wichita Falls, Tex.	1,833
Perrine, Irving, and W. C. Kite, Oklahoma City	407
Peters, Chas. B., Tulsa	8,513
Peters-Leahy Oil Co., Tulsa	816
Petroleum Co., The, Tulsa	7,265
Petroleum Co., The, and M. H. Mosier, Tulsa	17,455
Petroleum Exploration, Sistersville, W. Va.	187
Petroleum Extraction Co., New London, Conn.	1,136
Pettigrove, A. H., Dewey	1,171
Petty, C. S., Guthrie	60
Phillips, Waite Co., Tulsa	298,281
Phillips & Milam, Chelsea	19,810
Phillips Oil Co., Chelsea	1,378
Phillips Petroleum Co., Bartlesville	1,691,154
Pine, R. D., Okmulgee	275
Pine, W. B., Okmulgee	93,443
Pine, W. B., trustee, Okmulgee	1,340
Pioneer Petroleum Co., Tulsa	10,010
Plover Drilling Co., Bartlesville	13,712
Plumb, A. O., Tulsa	807
Pluto Oil & Gas Co., Dallas, Tex.	732
Plymouth Oil & Gas Co., Henryetta	349
Plymouth Petroleum Co. et al, Tulsa	16,649
Pollock, R. H. and E. J., Bartlesville	128
Post Oak Crude Oil & Gas Co., Logan, Iowa	944
Prairie Oil & Gas Co., Independence, Kans.	1,884,509
Prairie Oil & Gas Co., trustee for W. M. Graham Oil & Gas Co., Independence, Kans.	2,454
Prescott & Snider, Kansas City, Mo.	116
Preston, A. R., Okmulgee	1,662
Price, Ernest et al, Muskogee	224
Price, Sylvan S., Tulsa	403
Prince, C. V., Okmulgee	263
Probst, George C., et al, Tulsa	232
Probst, Geo. C., and James B. Morrison, Tulsa	1,938
Probst, Geo. C., Jas. B. Morrison and S. S. Robinson, Tulsa	207
Producers & Refiners Corp., Denver, Colo.	338,481
Pulaski Oil Co., Tulsa	131,276
Purdy Petroleum Corp., Tulsa	1,231
Pure Oil Co., Columbus, Ohio	821,900
Pyramid Oil & Gas Co., Winchester, Ky.	11,284
Q	
Quinlan, C. P., Tulsa	4,051
Quinlan, Felix, Tulsa	219
R	
Rabbits Foot Oil Co., Davenport, Iowa	3,867
Ramsey, W. R., and W. E., Oklahoma City	39,450
Ramsey Oil Co., Caney, Kans.	6,270
Ranger Gulf Corp., Tulsa	9,334
Rape, B. F., and Grace Pirtle, Newkirk	328
Rapp, H. E., Okmulgee	125
Rapp Drilling Co., Okmulgee	220
Ray, Tunie S., Okmulgee	275
Raycomo Oil & Gas Co., Orrick, Mo.	680
Raydure, W. S., Bowling Green, Ohio	749
Read, Wm. A., Tulsa	6,510
Red, R. D., Tulsa	312
Red Bank Oil Co., Tulsa	49,567
Redoak Oil Trust, Ardmore	4,909
Reed, H. W., agent, Nowata	908
Reed & Harmon, Nowata	4,223
Reesman, S. S., Tulsa	90
Regal Oil Co., Pittsburgh, Pa.	1,764
Regal Oil & Gas Co., Tulsa	18,252
Reliance Oil Co., Houston, Tex.	5,056
Reliance Oil Co. of Okla., Houston, Tex.	5,792
Renken, H. J., Chicago, Ill.	183
Reno Oil Co., Sistersville, W. Va.	1,304
Reno Oil Co. and E. J. Flynn, Sistersville, W. Va.	2,529
Reno Oil Co. and P. B. and W. B. Flynn, Sistersville, W. Va.	137
Republic Oil Ref. Co., Rock Island, Ill.	263
Rex Oil & Gas Co., Winchester, Ky.	11,284
Reynolds, C. E., trustee, Okmulgee	273
Reynolds, George W., adm., Cleveland	36
Reynolds, W. G., Okmulgee	223
Reynolds Oil & Gas Co., Independence, Kans.	1,294
Rhodes, G. R., trustee (by Mid-Kansas Oil & Gas Co.), Findlay, Ohio	14,277
Rice, T. E., and Frank Brewster, Talala	406
Rice Creek Prod. Co., Tulsa	486
Richards, A. M., Cleveland	630
Richards, Walter W., and Frank D. Lackey, trustees, Wilmington, Del.	976
Richmond Gasoline Co., Tulsa	672
Riddle, L. B., trustee, Marietta, Ohio	49
Rielley, P. J., Delaware	156
Rigdon & Bruen, Kansas City, Mo.	5,410
Ringling, John, Ardmore	7,056
Riverland Co., Tulsa	65,083
Roberts, C. M., Okmulgee	1,275
Roberts, Geo. D., Tulsa	5,965
Robertson, Glass & Harmon, Nowata	1,023
Robinson, E. L., and Gibson-Zahniser Oil Corp., et al, Tulsa	37,886
Rockland Oil Co., Ardmore	49,439
Rood, Foster & Meloy, Bartlesville	1,137
Rose City Oil Co., Tulsa	394
Ross, C. O., Coffeyville, Kans.	2,744
Roth, C. E., Independence, Kans.	3,217
Roth, E. K., Tulsa	945
Roumania Oil Co., Ardmore	232
Roxana Petroleum Corp., St. Louis, Mo.	2,275,660
Roxoline Petroleum Co., Oklahoma City	765
Ruth Fuel Co., Bartlesville	3,096
Ryan Consolidated Petroleum Corp., Bartlesville	13,268
S	
Safety First Oil & Gas Co., Duncan	4,275
Salt Creek Oil Co., Nowata	875
Sammel, J. B., and W. B. Stewart et al, Robinson, Ill.	491
Sanders Oil & Gas Corp., Tulsa	868
Sanderson, M. P., Oxford, Kans.	242
Sand Fork Gas & Petroleum Co. and Summit Oil Co., Bartlesville	675
Sapulpa Refining Co., Denver, Colo.	134,829
Sargent, J. C., Tulsa	746
Savage, W. Z., Tulsa	604
Savole, T. L., Oil & Gas Co., Tulsa	747
Savoy Oil Co., Tulsa	15,373
Sawyer, F. L., trustee, Independence, Kans.	118
Schaffer, Danner and Snowden & McSweeney Co., New York, N. Y.	1,076
Schermerhorn, J. B., Minneapolis, Minn.	64,995
Schermerhorn-Ardmore Co., Minneapolis, Minn.	54,486
Schermerhorn-Young Co., Minneapolis, Minn.	6,173
Schmidt, Geo., estate, Tulsa	195
Schmidt, Louis & Louisa K., Sapulpa	379
Schock, J. J., Oil & Gas Co., Okmulgee	824
Schlegel & Shreve, Tulsa	225
Schlingman & Lasarky, Tulsa	2,082
Schoenfeld, C. H., & Son, Stroud	1,895
Schoenfeld, Chas. H., J. F. Millikeu, Geo. C. and Karl M. Probst, Tulsa	503
Schoenfeld & Millikin, Stroud	1,825
Schonwald, Dave, Blackwell	3,535
Schroers, H. J., Vinita	207
Schotland Oil Co., Robinson, Ill.	562
Scott, Euna, Los Angeles, Calif.	2,397
Scott, W. F., Kansas City, Mo.	178
Scott & Arrington, Walters	450
Scruggs, San Antonio, Tex.	163
Seagrave, F. L., Baxter Springs, Kans.	118
Selby, J. L., Muskogee	2,225
Selby Oil & Gas Co., Tulsa	159,685
Sellers, H. M., Bartlesville	430
Sellers, H. M., receiver, Bartlesville	535
Sewell, O. A., Coweta	125
Shaffer, C. B., trustee, Chicago, Ill.	385
Shaffer Oil & Ref. Co., Tulsa	414,428
Shaffer-Mankin Oil Co., Tulsa	394
Shaner Drilling Co., Ardmore	68
Shear & Marcus Oil Co. and M. Shear, Bradford, Pa.	998
Shedivetz, H. W., and W. E. Carpenter, Okmulgee	189
Sheeders, Frank S., Pawhuska	108
Sheedy, Frank, Independence, Kans.	2,302
Sheets, Alice M., Copan	229
Sheets, E. H., Copan	457
Sheets, Millicent E., Copan	229
Sheridan Oil Co., Tulsa	15,188
Sheridan Oil Co., trustee, Tulsa	137
Shertzer Bros., Dewey	5,123
Shipley, John F., Wichita Falls, Tex.	56
Shipley, J. M. and Louise Price, Wichita Falls, Tex.	143
Shonk, Crawford C., Charleston W. Va.	2,565
Short Grass Oil Co., The, Norton, Kans.	914
Showalter & Cutchall, Sapulpa	401
Shrewsbury, E. H., estate, Muskogee	246
Shufflin, M. B., Coffeyville, Kans.	1,354
Shuler & Fischer, Tulsa	2,525
Shulthis, A. W., estate, Independence, Kans.	1,290
Sidwell, J. S., Tulsa	134
Sidwell Drilling Co., Sapulpa	861
Siebler, Ben, Cincinnati, Ohio	408
Siggins, Shope & Co., Coffeyville, Kans.	292
Sikes, Louis, and Boggs Oil Corp., Oklahoma City	51,934
Silurian Oil Co., St. Louis, Mo.	115,640
Simons, G. A., Okmulgee	11,175
Simons, I. D., Okmulgee	7,556
Simms Oil Co., Dallas, Tex.	18,129
Simpson-Fell Oil Co., Ardmore	28,625
Sinclair Oil & Gas Co., Tulsa	2,628,728
Sinclair Oil & Gas Co. for Laurel Oil Gas Co. and Gypsy Oil Co., Tulsa	6,389
Sitrin Bros., Tulsa	5,510
Sheeders Oil & Gas Co., Pawhuska	1,285
Skeeter Oil & Gas Co., Garber	346
Skelly Oil Co., Tulsa	1,029,006
Skelly Oil Co. for Basic Petroleum Co., Tulsa	1,239
Skelly Oil Co. for M. Cassidy heirs, Tulsa	252
Skelly Oil Co. for F. J. Downey, Tulsa	703
Skelly Oil Co., for K. K. Farba, Tulsa	59
Skelly Oil Co. for A. T. Ferrel, Tulsa	874
Skelly Oil Co. for Arnold H. Goss, Tulsa	874
Skelly Oil Co. for C. L. Hodson, Tulsa	30
Skelly Oil Co. for R. G. Smith, Tulsa	703
Skelton, L. S., estate, Okmulgee	12,745
Skelton-Moore Oil Co., Bartlesville	7,591
Slick, T. B., Clarion, Pa.	372,432
Slick Oil Co., Tulsa	1,590
Sloan, E. H., Tulsa	135
Sloan, J. W., trustee, et al, Tulsa	3,244
Slyman, Ellis, Bristow	225
Smedley, A. W., Tulsa	425

TITUSVILLE OIL COUNTRY MACHINERY

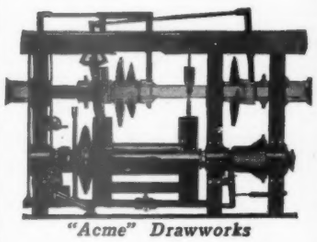
No. 6 Rotary



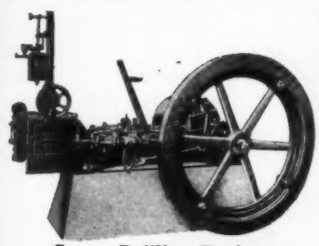
"Acme" Swivel



Slush Pump



"Acme" Drawworks



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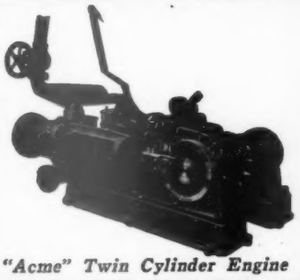

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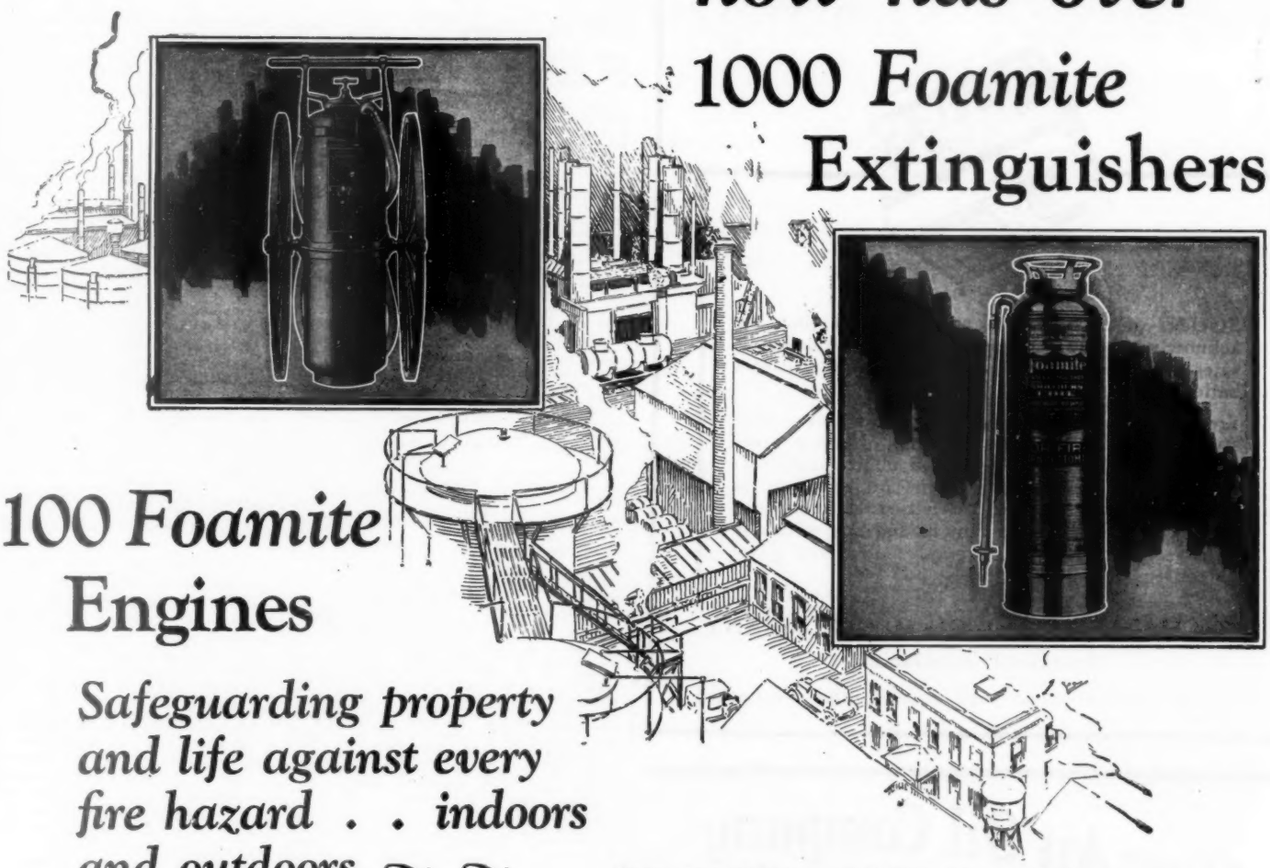
Name and address—	Barrels
Smith, Carl D., Tulsa	3,372
Smith, C. E., estate, Ardmore	8,081
Smith, C. T., trustee, Okmulgee	3,128
Smith, D. M., Okmulgee	1,350
Smith, D. M., and F. W. Hulings, Okmulgee	357
Smith, E. T., & Co., Bartlesville	469
Smith, G. J., Tulsa	20,965
Smith, Margaret L., and Chas. Robt. Jr., Ardmore	16,038
Smith, Mrs. Mary S., and Marie S., Ardmore	21,910
Smith, P. C., Tulsa	1,840
Smith, Paul W., Tulsa	320
Smith, Samuel H. Oil Co., Tulsa	271
Smith, J. T., and A. P. Morgan, Sapulpa	145
Smith, Will H., Ardmore	6,313
Smith & Daugherty, Nowata	150
Smith-Hanlon, Inc., Tulsa	2,127
Snowden-Danner, et al, Tulsa	3,382
Snowden & McSweeney, New York, N. Y.	38,776
South Bend Oil Corp., Tulsa	7,497
Southern Crude Oil Co., Shreveport, La.	315
Southern Oil & Gas Co., Coffeyville, Kans.	1,746
Southwestern Oil Fields Co., Tulsa	41,516
Southwestern Oil, Gas & Coal Co., Independence, Kans.	2,112
Southwestern Petroleum Co., Tulsa	345,544
Southwestern Petroleum Co., P. H. Lord, estate, Chas. S. and Henry C. Lord, Tulsa	4,788
Spangler, C. W., Tulsa	873
Speary, C. F., J. M. Speary and John Mills, Marietta, Ohio	218
Speary Bros. & Mills, Marietta, Ohio	4,466
Speary, Geo. M., Okmulgee	341
Spelts, A. J., Jenks	512
Sperata Oil Co., Bartlesville	800
Spring Oil Co., Independence, Kans.	2,059
Sprague Oil Co., Ardmore	7,604
Stacy, Dean M., Oklahoma City	407
Stager, J. A., Nowata	869
Stager & Cornelius, Nowata	482
Stake Oil Co., Independence, Kans.	400
Staley & Wynne, Wichita Falls, Tex.	2,329
Standeven, H. L. and Jas. S. Terry, Tulsa	630
Standish Oil Co., Bartlesville	6,926
Starr, John C. and Riley Oil Co., Vinita	1,688
Stauffer, M. T., agent, Tulsa	131
St. Charles Oil Co., St. Charles, Mo.	418
Stebbins Oil & Gasoline Co., Tulsa	1,585
Stein, P. H. and M. S. Mussellem, Muskogee	584
Steinberger & Lucas, Skiatook	1,789
Stephens, B. A., trustee, Wagoner	1,014
Stephens, C. S., Coffeyville, Kans.	209
Sterling Gas & Oil Co., Columbus, O.	669
Sterling Oil & Gas Co., Tulsa	27,478
Stewart, C. E., Independence, Kans.	421
Steyner Oil Co., Bartlesville	16,691
Stockdell, Theodore, Oklahoma City	125
Stoner, O. P., Sapulpa	470
Stoner Bros., Tulsa	296
Stout, J. M., trustee, Muskogee	1,466
Stout, W. E., Parkersburg, W. Va.	156
Stover, J. L., Tulsa	1,366
Straight, Preston et al, Bartlesville	1,323
Striker, John H., Tulsa	135
Strimple, J. A., Janesville, Wis.	345
Studebaker, E. H., South Bend, Ind.	379
Studebaker, Ida, South Bend, Ind.	379
Sturm, H. L., Ardmore	561
Stuart, T. H., trustee, Sapulpa	1,475
Sullivan, E. J. and W. C. Dickey, Bartlesville	751
Sullivan, M. J., Kansas City, Mo.	85
Summers, Jack, Muskogee	1,695
Sunbeam Pet. Co., Tulsa	1,447
Superior Oil Corp., Lexington, Ky.	50,821
Suppes, G. B., R. E., and C. E., Tulsa	3,353
Sure Oil Corp. (N. T. Gilbert, receiver, Tulsa	6,497
Surpass Pet. Co., Tulsa	946
Sunray Oil Corp., Oklahoma City	22,758
Sutherland Pet. Co., Ardmore	6,351
Sutton, Geo., Prague	538
Swain, Guy, Bartlesville	302
Swanson, John, Chanute, Kans.	928
Swanson, John, Fred Swanson, estate, Chanute, Kans., and Dan Kelly, Marietta, O.	1,536
Swastika Oil Corp., Tulsa	318
Sweeney, Clara E., Exec., Tulsa	123
Sweeney, J. F. & Co., Tulsa	7,552
Swindler, J. A., Muskogee	7,528
Swindler, J. A. & Son, Muskogee	18,011
Swoap, J. F., Oilton	640
Sykes, C. E., Ardmore	1,622
T	
Taft Oil Co., Independence, Kans.	2,950
Tait, S. W., Montpelier, Ind.	152
Terrell Co., Terrell, Tex.	2,835
Terwilliger, C. H., Tulsa	1,335
Test Oil Co., Bradford, Pa.	4,559
The Texas Co., (Prod. Dept.), Tulsa	1,064,150
Texas-Okla. Inv. Co., Independence, Kans.	1,587
Texas Pacific Coal & Oil Co., Thurber, Tex.	116,045
Texokan Prod. Co., Coffeyville, Kans.	94
32nd Oil & Gas Co., Ardmore	1,635
Thlocco Oil Co., Tulsa	13,471
Thompson, E. L., Tulsa	86
Thompson, J. H., Okmulgee	228
Thompson, J. N., W. M. and Roy B., Tulsa	232
Thompson, W. M. and Roy B., Tulsa	1,195
Thompson Oil & Gas Co., Tulsa	5,602
Thompson-Jordon, Special, Okmulgee	661
Thompson & Welder, Cleveland	1,538
Thompson, Welder & Neal, Cleveland	2,691
Thurmond, T. A., Ardmore	3,088
Thurvan Oil Co., Bartlesville	580
Tibbens, C. G. et al, Tulsa	626
Tidal Oil Co., Tulsa	449,512
Tidal-Osage Oil Co., Tulsa	269,315
Tiger Mountain Oil Co., Tulsa	5,445
Tiger Pet. Co., Tulsa	15,376
Titus, C. W. et al, Tulsa	61,745
Toney, Mina H., St. Louis, Mo.	217
Trainer, J. E. et al, Salem, W. Va.	171
Trainer Oil & Gas Co., Bartlesville	505
Transcontinental Oil Co., Tulsa	199,343
Travis, M. R., Tulsa	1,478
Traywick, N. E., Okmulgee	184
Trefts, John C., Buffalo, N. Y.	1,030
Troy, M. A. and G. W. Howard, Olean, N. Y.	73
Troy Oil & Gas Co., Sapulpa	4,996
Tull Oil & Gas Co., Yale	382
Tuloma Oil Co., Tulsa	149
Tulsa Co., Oklahoma City	12,024
Turley, G. W., Oklahoma City	647
Turman Oil Co., Tulsa	48,685
Turner, T. E. and T. C., Mounds	1,403
Tuttle, R. M., Cushing	437
Tuttle-Keppel Oil Co., Hominy	1,216
Tyee Oil & Gas Co., Bartlesville	1,261
Tyler, D. M. et al, Dewey	2,756
Tyrrell, H. C., Tulsa	466
Twichell, J. A., Okmulgee	322
Twin State Oil Co., Tulsa	554,103
U	
Umburn, Gilla, Weleetka	278
Umburn, W. L., Weleetka	2,425
Union Drilling Co., Tulsa	332
Union Oil & Mining Co., Indianapolis, Ind.	1,456
Upp, O. E., Tulsa	950
Upp, O. E. et al, Tulsa	381
Urschel, C. F., Oklahoma City	4,213
Urschel, Flored S., Oklahoma City	4,213
V	
Van Dall Bros., Bartlesville	1,382
Vandervoort & Hoss, Piatt	756
Vandivort, W. M., Nowata	645
Van Eman, G. L., Jennings	2,931
Van Horn, E., Chelsea	137
Van Horn, R. V., Clifton Forge, Va.	339
Van Moss Oil Co., Bartlesville	1,354
Vance, S. E., Tulsa	872
Vee Oil Co., Oklahoma City	464
Verland Oil & Gas Co. (N. T. Gilbert, receiver), Tulsa	3,219
Vensel, Elliott & Vensel, Tulsa	2,580
Vick Oil Co., Tulsa	135
Vicmar Oil Co., Tulsa	3,533
Viersen, A. A., Okmulgee	1,915
Vowell-Jackson, Sapulpa	6,534
W	
Wash-shah-she Oil Co., Bartlesville	6,741
Waite, C. L., Los Angeles, Calif.	506
Waite, Fannie C., Los Angeles, Cal.	506
Walda Oil & Gas Co., Carlisle, Pa.	6,752
Walker, P. G. and O. K. Eysenbach, Tulsa	375
Walker, Valley Oil & Gas Co., Duncan	899
Wall Oil Co., Tulsa	78
Wallace, F. H., Tulsa	2,600
Wallace, Harold, Bkrp., Chas. S. Lynch, receiver, Ardmore	3,472
Wallace & Thompson et al, Okmulgee	1,407
Walsh Oil Co., Tulsa	6,644
Walter, H. J., Tulsa	381
Ward Oil & Gas Co., Tulsa	3,091
Warner-Caldwell Oil Co., Titusville, Pa.	23,274
Warren Oil Co., St. Louis, Mo.	269
Warwick, L. H., trustee, Nowata	211
Watchorn, Robt., Oklahoma City	5,397
Watchorn Oil & Gas Co., Oklahoma City	131,782
Watkins, M. D., Oklahoma City	327
Wayne Oil Co., Tulsa	1,916
Weber, Howard, Bartlesville	2,190
Weber, Obins & Beattie, Bartlesville	471
Webster, G. W., Tulsa	2,585
Webble, H. C., et al, Coffeyville, Kans.	232
Weis, Sigmund, Walters	107
Welch, F. P., Rock Island, Ill.	160
Welch Gas & Oil Co., Stillwater	450
Wellsville Oil Co., Wellsville, N. Y.	1,637
Welsh, A. L., Oklahoma City	5,100
Welsh, J. D., Kansas City, Mo.	485
Welsh, M. P. and John and C. T. Daughetry, Nowata	234
Wentz Oil Corp., Ponca City	974,375
Wertzberger, D. D., Tulsa	454
West, A. T., Ardmore	625
West, J. H., Tulsa, Okla.	7,730
Westerly Oil Co., Bartlesville	39,485
Western American Oil Co., Bartlesville	2,775
Western Natural Gas Co., Tulsa	1,818
Western Oil Corp., Tulsa	9,307
Westheimer & Daube, Ardmore	3,806
Wickett, F. H., Shreveport, La.	8,612
Wickett, K. L., Tulsa	648
White Eagle Oil & Ref. Co., Wichita, Kans.	19,072
Whitehill, B. F., Tulsa	1,696
Whitehill, Howard J., Tulsa	129
Whitehill, S. M., Okmulgee	3,441
Whitehill, Donovan & Whitehill, Tulsa	826
Whitehill, Donovan, Hayden & Whitehill, Tulsa	757
Whitehill & Glass, Tulsa	857
Whitehill & Smith, Tulsa	1,408
Whiteside, R. B., Duluth, Minn.	203
Whitfield, B. V., Oklahoma City	2,754
Whittier, M. H., Tulsa	756
Wigton, B. L., Okmulgee	675
Wigton & Long Co., Okmulgee	50,562
Wilcox, Fred L., and G. C. Schmuck, Tulsa	400
Wilcox, H. E., Indianapolis, Ind.	70
Wilcox, H. F. Oil & Gas Co., Tulsa	258,099
Wilcox, H. F.-Pampa Oil Co., Tulsa	6,834
Wilcox, H. G. and E. M. Oswalt, Tulsa	113
Wilcox, Oswalt & Wilcox, Indianapolis, Ind.	539
Wilhoit, Ethel J., Exec., and R. M. Jones, trustees, Kansas City, Mo.	2,436
Wilhoit, J. C., No. 2 Acct., Kansas City, Mo.	615
Wilson, J. H., Chicago, Ill.	297
Wilson, John W., and Louisa, Loco	399
Windsor Oil & Gas Co., Okmulgee	122,763
Wineland Oil & Gas Co., Boynton	1,709
Winemiller, J. H., Tulsa	439
Winkler, L. W., Duncan	2,665
Winona Oil Co. of Delaware, Tulsa	65,019
Winters, M., Independence, Kans.	1,166
Winters Oil Co., Bartlesville	986
Wise, W. A., Admr., Sapulpa	49
Wise, W. A., receiver, Sapulpa	446
Wise & Jackson, Sapulpa	5,997
Wiser Oil Co., Bartlesville	10,776
Withington, Margaret M., Marietta, Ohio	229
Wittmer Property Trustees, Pittsburgh, Pa.	20,200
Wolfe, Frant, trustee, Tulsa	418

One big Oil Company alone *now has over* 1000 *Foamite* Extinguishers



100 *Foamite* Engines

Safeguarding property and life against every fire hazard . . indoors and outdoors

THE following letter was recently received from W. R. Couser, Agent for the Magnolia Petroleum Company at Charlotte, Texas:

> "I am using your *Foamite* Extinguishers, and am glad to say that on last Monday morning about 5:30 A. M. I was able to check a blaze that was threatening to destroy several buildings after two had already burned to the ground."

This and other instances of unfailing performance in emergency have brought it about that the property of the Magnolia Company and its subsidiary, the Magnolia Pipe Line Company, is now safeguarded by *Foamite* equipment — including more than 1000 *Foamite* Hand Extinguishers and 100 *Foamite* 40-gallon Engines.

Throughout the oil industry—in refineries and storage stations—around stills and pipe lines—on tank cars and huge storage tanks—*Foamite* portable equipment and *Foamite* systems have won recognition as the modern standard of fire protection—

Not only because Foamite-Childs engineers have acquired such broad, practical knowledge of oil-fire hazards, but also because they can supply proven, time-tested equipment and materials like *Foamite* Mixing Chambers and Firefoam Liquid—the foaming agent which produces *genuine*, fire-smothering Firefoam.

* * *

Through representatives at points convenient to all the oil producing and refining centers we are always ready to help you solve the problem of protecting your property against fire.

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Fire Protection Engineers and Manufacturers
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A Complete Engineering Service

Against Fire

Ahead

Steelex, in its class, is so far ahead that we acknowledge no competition. Ever-increasing sales and reports from all fields substantiate this belief.

Steelex Balls and Seats are for use where excessive sand quickly wears out the ordinary steel ball and seat. Made of selected choice material; accurately paired because each ball and seat is routed together. Treated to rust-resistant oil and carefully packed in the famous red box with the gold seal. Handled by all good dealers and guaranteed to give satisfaction.

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Franklin, Pennsylvania

Products that cut down your underground overhead.

How An Oil Company Is Saving $6,250 Per Year

IN ten stills at the refinery of an oil company, fire brick construction formerly served only 15 months.

Now the brickwork in these stills serves more than three times as long, because it is laid up with ADAMANT, the original high temperature fire brick cement.

This longer serving brickwork saves the oil company $6,250.00 per year in maintenance costs for the ten stills.

Perhaps you can prolong the life of your fire brick construction and reduce your brickwork repair costs with ADAMANT. A test will help you to find out. If you'd like to make this test, mail us the coupon below.

Have You A Copy?

This new booklet contains many suggestions that will help you build longer-serving brickwork. Write for a copy.

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783 So. Swanson St., Philadelphia, Pa.

We would like to find out if ADAMANT will prolong the life of our fire brick construction and reduce repair costs.

Name and Title.....

Company .....

Address .....

Name and address—	Barrels
Wolfe Oil Corp., Bristow	10,085
Wolverine Pet. Corp., St. Louis, Mo.	315,375
Wood, T. J., Tulsa	5,880
Wood Oil Co., Tulsa	21,301
Woodard, Geo. E., Nowata	1,371
Woodard, Burkett & Woodard, Nowata	2,334
Woodard & Woodard, Nowata	1,308
W. P. Oil & Gas Co., Cleveland	866
Wright, J. H., Sapulpa	66,568
Wright, W. T., Tulsa	138
Wrightsman Pet. Co., Tulsa	3,530
Wylie, W. J., Oklahoma City	1,500
Y	
Yalana Oil Corp., Oklahoma City	7,378
Young, Geo. L., Dewey	396
Z	
Zahn & Crawford, Tulsa	2,257
Zola Oil Co., Tulsa	19,674
Zickefoose, C. M., Keystone	276
Supplemental	
Adams & McGahey, Ardmore	16
Adams & Prince, Ardmore	5,651
Bank of Commerce, Okmulgee	155
Bean, Howard Drilling Co., Amarillo, Tex.	4,005
Berry, J. K., Tulsa	566
Berry, R. G., Tulsa	330
Berry, R. H., Tulsa	802
Brann, Jas., Bartlesville	3,875
Buttram Pet. Corp., Oklahoma City	100
Buttram, Frank, Oklahoma City	82,003
Canary, J. D., Littleton, Colo.	3,836
Canary & Canary, Littleton, Colo.	2,681
Canary & Sinclair, Littleton, Colo.	71
Carson, W. A., Oklahoma City	2,100
Chief Drilling Co., Okmulgee	182
Connely, W. C., Tulsa	375
Criswell, Georgia B., Haskell	425
Davis, A. L., and J. P. McNutt, Morris	187
Dean, John, estate, Guthrie	781
Dixie Oil Co., Cement	1,912
Donnelly, J. E., Tulsa	216
Doyle, Pearl Keys, Kansas City, Mo.	350
Ducombe, C. L., Sand Springs	675
Gardner, J. K., Okmulgee	942
Getzendaner, R. W., Waxahachie, Tex.	1,214
Graham, Jas. R., Bartlesville	15,403
Hayden, John F., Tulsa	695
Hazen, Irwin R., agent, Chicago, Ill.	493
Hennessey, J. E. and J. H. Thompson, Okmulgee	170
Henryetta Oil & Gas Co., Henryetta	704
Kingsbury, C. W.-Geo. Kinney, Sand Springs	105
Kingsbury, C. W.-Geo. Kinney-E. M. Monsell and C. F. Tingley, Sand Springs	1,714
Kennedy, H. W., Tulsa	581
Kirkwood & Kennedy, Tulsa	508
Knickerbocker Oil Co., Tulsa	2,596
McNutt, J. P., Morris	66
Matthews, R. S., Tulsa	183
Morey, E. E., Tulsa	53
Mul-Berry Oil Co., Cushing	46,405
Neustadt, Walter, Ardmore	4,006
O'Connor, Martin, Olean, N. Y.	420
Oklahoma Pet. Synd., Okmulgee	1,286
Page, Chas., C. W. Kingsbury, and Geo. Kinney, Sand Springs	1,884
Page, Chas., C. W. Kingsbury, Geo. Kinney and C. F. Tingley, Sand Springs	55
Parsons, E. E., Okemah	928
Patterson, M. R., Jamestown, N. Y.	5,445
Peterson, S. F., Tulsa	982
Polar Creek Oil & Gas Co. Tulsa	734
Skelly, W. G., Tulsa	1,326
Spencer, A. M., Oklahoma City	958
Todd, E. G., Cleveland	240
Total	42,690,663

ADDITIONAL REPORTS

Since the compilation by the State Auditor's office of Oklahoma of the gross production reports for the fourth quarter of 1925, as published in this issue, starting on page 184, the following reports have been received, making the total production of Oklahoma for the fourth quarter 42,789,236 bbls. The additional reports are: Gardner Petroleum Corp., Tulsa, 78,739; North Baltimore Oil & Gas Association, Okmulgee, 19,834.

BIG RESULTS FROM FIELD WORK IN 1925

(Continued from Page 108)

conservative development. All that is need to bring about a California production increase is a demand for the crude product and an accompanying higher price. In Oklahoma a new pool has been discovered in Osage County, south of the Burbank Field. The discovery well is nearly as big an initial producer as that which opened the Burbank Pool. This pool will be slow in development as only four leases have been sold and no offset leases will be offered at the March sale of Osage acreage. This is the only spot in the State that shows the possibility of big new production thus far this year, and it alone cannot stay a steady decline in production. Kansas offers nothing whatever thus far that promises big results, and neither does North or East Central Texas. West Texas and the Panhandle are being punctured with wildcat wells, but we have yet to look into the future and guess what will result from this widespread exploration work. Arkansas has not broken out with anything promising and the only development in Louisiana thus far has been to show that the Urania Field is capable of wells of large production, held back, however, by bad sand conditions. The Gulf Coast, with its surprising showing of high-grade oil wells in widely separated parts of that big area, takes on new importance. This is an entirely new element in the producing history of the Gulf Coast region and opens up important possibilities. In all the Rocky Mountain region up to this writing nothing new has thus far developed this year. The Sunburst Field in Montana is capable of more production, but no great oil field is expected there by even the most optimistic, and it alone is just now the best looking area in the Rockies.

It will be seen that up to the middle of February the industry is just about where it was at the same time last year. The Smackover deep sand production and the opening of the Garber deep sand development two of the largest developments of last year came later, and whatever big new fields the country may see this year will come out of the efforts of companies and individuals who are out on the plains, back in the woods and up in the mountains with their lone wildcats, or drilling deep into the earth to find lower oil horizons in already established fields.

WILL AMEND TEXAS CONSERVATION RULES

AUSTIN, Tex., Feb. 13.—Proposed changes in oil and gas conservation regulations of the state railroad commission have been drafted by H. E. Bell, chief supervisior, and set for hearing February 17. Judge Bell announced a conference with representatives of the oil and gas industry will be held here preceding the formal hearing. The changes, as abstracted by Judge Bell include:

Rule 6, relating to ratable taking of gas omitted, because its enforcement belongs to the gas utilities division.

Notices to plug or shoot wells to be filed with deputy supervisor of district. Other required reports to be sent to the oil and gas bureau.

Rule 17, regulating density of mud-laden fluid, omitted, because otherwise covered.

Section 3, Rule 23 to require results of shooting wells to be reported under oath.

Rule 24, changed to permit making an estimate of open flow capacity of gas well, under special permit, where making actual test would endanger life of well.

Rule 39, Section 7 changed to read: "Open earthen storage of merchantable oil is prohibited except when same has a minimum flash of 175 F., closed cup; provided the commission may grant special permission for temporary open storage not otherwise provided for in order to meet an unforeseen emergency."

Change of swabbing rule prohibiting swabbing except "when tesing or cleaning out a well, and such swabbing shall not continue for longer than five days without a permit; provided this shall not apply to swabbing for production under special permit granted upon a hearing and after notice to operators and lessees in pool affected."

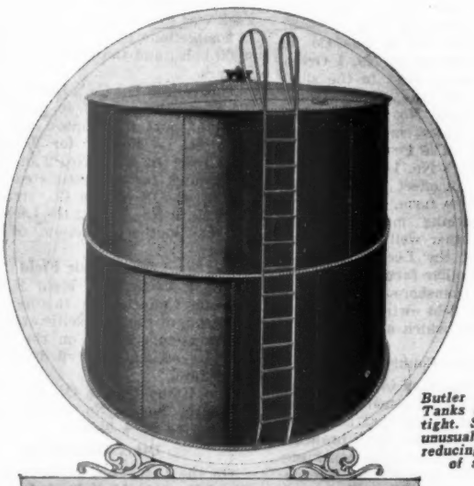
Rule 37 changed so as not to require a special permit to drill within less than 300 feet to another well producing from a different sand, unless new well is within less than 50 feet of producer.

Vacuum rule broadened to authorize vacuum not only in depleted field but in any instance where conservation renders it advisable. Possible changes to the carbon black rule may be taken up in the conference also.

TO ERECT $1,000,000 HOLDER

SAN FRANCISCO, Calif., Feb. 13.—The Pacific Gas & Electric Co. program for 1926, calls for the erection of a holder of 10,000,000 feet in Oakland, to cost approximately $1,000,000.

Annual Statistics Should Include BUTLER Oil Equipment Figures!

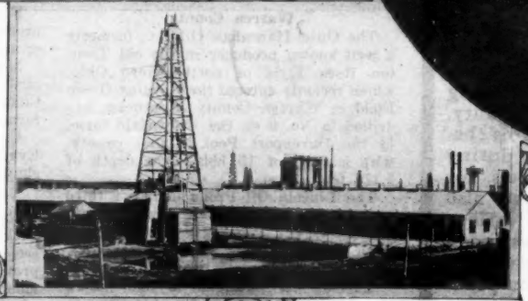


Butler Bolted Tanks are vapor-tight. Sheets are unusually large, reducing number of seams!

One of your most valuable assets is the service Butler furnishes you when you need a bolted tank, a storage tank, buildings—everything to protect your oil as it comes from the well till it flows into the motorist's tank—all pictured and described fully in the Equipment Catalog. Send for a copy today!

All heads are double electric welded! All holes for supports are punched, thus making assembling easy.

Butler "Full-light" Drive-in Station has windows on all sides.



Housing for Casing Head Gasoline Plant (34'x 384').

Sills are interchangeable, having 12-inch adjustment! Welding is on outside.

You save your time when you refer to Butler Oil Equipment Catalog. Its completeness aids you in getting what you want in a hurry. A request brings your copy promptly.

Butler Manufacturing Co.

Kansas City, Mo. **Minneapolis, Minn.**

Strom BALLS

—make good on any job—anywhere

You just can't buy "any ball" and get away with it—not if you want steady production, less pulling and more service per dollar invested.

That's why practically all leading producers have changed from "any ball" to Strom Balls—they know *they make good on any job*—anywhere—and they know the reason is that Strom Balls are scientifically built to do more than any other.

They are made of selected highest grade chrome alloy steel, uniformly hardened and held accurate as to size to within, plus or minus, .00005 and sphericity to within .000025—*they are made to make good.*

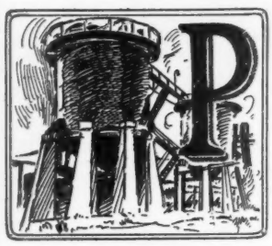
You too want balls in your working barrel valves that make good—well just ask your jobber for Strom Balls—he has them—if not, write us.

Strom Steel Ball Co.

612 to 630 Garfield Street

Oak Park [*Suburb of Chicago*] **Illinois**

You see them everywhere



ARTICULARLY for process temperatures around 200° you will see Bristol's Recording Thermometers Class II on duty. They check up temperatures (between 200° and 250° F.) during the drying out of barrels for greases and compounds; also during the treatment of various oil fractions to remove compounds that impart objectionable odors or tend to discolor product; also during agitation, etc. etc.

These Thermometers have a working range from 32° to 500° F., and are operated by the expansion of the vapor of a liquid.

First in the field and always standard, Bristol's Recording Instruments meet every need in temperature control. They comprise the most extensive line of Recording instruments in the World, including Pressure, Liquid Level, Temperature, Electricity, Motion, Speed, Humidity, etc.

Vapor filled

Ask for Catalogs.

The Bristol Company Waterbury, Connecticut

FOR 36 YEARS — Ask Any Technical Engineer — MAKERS OF

BRISTOL'S RECORDING INSTRUMENTS

KENTUCKY-TENNESSEE

(Continued from page 64)

No. 6 well on the Dave King farm, 400 feet southwest of No. 5, same farm. The Kentucky Oil Co. has made a location for a test in the center of the E. Morrison 40 acres to the west of the B. W. Thompson 40 acres and also west of the Gilbert Barlow 97 acres.

The Foster Oil Corp. is still trying to shut off water at its No. 1 on the R. B. Powers 81-acre farm, in the Powers Pool. Bolling & Loman are due to complete their No. 1 on the George Midkiff 50 acres in the Midkiff Pool, 1,500 feet northwest of the discovery well.

The White Plains Oil & Gas Co. is due to reach pay dirt at its No. 1 Orilla Ralph 70 acres, being close to the shallowest pay sand of the field. C. E. Daugherty and others' No. 8 on the Lucinda Crow 113 acres, is also getting close to pay sand. The Pennsylvania-Indiana Oil Syndicate's No. 11 on the John Swope 116 acres, an offset to No. 4 well on the Widow Crow farm, is reaching a stage where something must be found worth while. Another well due for completion is that of the Leeper Oil Co.'s No. 6 on the S. Collier farm.

Adivice from Owensboro is that work is retarded in the field owing to the condition of the roads which are practically impassable.

Barren County

Little was accomplished in the Glasgow Field of Barren County, something out of the ordinary for a county that has taken the lead for many months in all branches of the producing end, but like other sections the mud is so deep off the macadamized highways that even walking is almost out of the question.

Unknown parties drilled in a semi-wildcat well on the Matthews farm, near the Hall-Baker Field, which proved a dry hole.

The Wood Oil Co.'s No. 12 on the W. M. Church farm, north of Glasgow, in the Hall-Baker Pool, is reported good for 7 bbls. at 540 feet, which is below the shale, and its No. 9 on the Houck Brothers farm, same pool, is said to show for 8 bbls. at 504 feet.

There are close to 20 strings running in various parts of Barren County, although a number are shut down.

Warren County

The Onsel-Hanrahan Oil Co., formerly a well known producer in the old Trenton Rock Field of northwestern Ohio, which recently entered the Bowling Green Field in Warren County, Kentucky, has drilled in No. 9 on the Brownfield farm, in the Davenport Pool of that county, with a flush of 15 bbls. at a depth of 1,177 feet.

The Lincoln Oil Producing Co.'s third well on the C. E. Snell farm, also in the Davenport Pool, is credited with a flush around 15 bbls. at 1,090 feet. No. 4, same farm, is under way.

Thomas A. Sheridan is shut down around 200 feet in his No. 4 on the C. G. Davenport No. 3 farm, in the Davenport Pool, and spudding in No. 4 on the C. G. Davenport No. 1 farm, same pool.

Wilson and others are reported shut down at around 900 feet at No. 3 on the Herbert Jenkins farm. William Zimmer is drilling around 400 feet at No. 10 on the Covington lease, in Block 7.

Allen County

The Scottsville Field of Allen County reports two new completions. On the W. E. Oliver farm, A. E. Meffert drilled a 4-bbl. flush well at No. 15 at 380 feet, while Vic DeCaigney's No. 7 on the S. and K. Thatton farm showed 2 bbls. at 440 feet.

The Allen Oil Corp. is reported to have shut down No. 16 on the Lou Motley farm, roads being impassable.

Less work is under way in Allen County than at any time since this great shallow field was first developed in 1917-18. Practically no wells have been drilled within the past year and a half in outlying sections, and as proven locations have been fairly well drilled there is little hope for a resumption of work until the wildcatter gets busy. This same condition prevails in Warren, Simpson and Logan Counties.

On the L. R. Blythe lease, in the Kettle Creek district, Cumberland County, Bonnell and others have a good looking well in the top of the second Sunnybrook sand. At present it is shut in waiting for tankage.

At Pulsey Creek, Reid, McClintock & Heckathorne's No. 3 J. M. Hughes is drilling in the Pencil Cave. Four other strings of tools are running at Kettle Creek.

Eastern Division

Reports from the eastern division of the Blue Grass State show that a perfect week was experienced as out of a total of 13 completions 10 were oilers with a flush of 60 bbls., and the remaining three were gassers.

The Wilson Oil Co.'s second venture on the Vinson heirs farm, in the South Weir Field of part of Johnson and Magoffin Counties, is showing for 3 bbls., while the Clyde Oil Co.'s No. 2 on the R. L. McCormick farm is estimated at 4 bbls. The Fych Oil & Gas Co. struck a nice gas well in No. 7 along the Licking River, in the southern section of Magoffin County.

North Weir Field

In the North Weir Field of Lawrence-Johnson Counties, in the new northern extension of the Ayresville area, Garrison & Townsend's No. 4 on the L. N. Hay farm is estimated at 6 bbls. from the Weir sand.

The Union Gas & Oil Co.'s No. 6 on the R. N. Sparks No. 2 farm, same field, is reported at 4 bbls.

Other Completions

On the Left Fork of Beaver Creek, in Floyd County, the Yolando Oil Co. drilled in a nice gas producer in a second attempt on the T. Collins farm, while the American Roller Mills Co. also brought in a nice gasser in the Summit area in No. 21 well.

C. O. Amsler and others' No. 2 on the Reid heirs farm, in the Irvine Field of Estill County, produced 5 bbls. flush, while Miller & Child's No. 2 on the Andrew Isaac farm is said to be good for 3 bbls.

Wolfe County is credited with a 10-bbls. producer drilled by the Petroleum Exploration Co. in No. 2 Spencer heirs lease.

Elliott County has another commercial producer to its credit in Campbell, Wheeler and others' No. 3 on the J. Dials farm.

Marsh & Shearer made a nice 12-bbl. strike in the Minticell Field of Wayne County, in a test on the J. T. Hatfield farm, in district 13.

Combs & Fleming's No. 2 on the Elmer Evans farm, in the Lee-Owsley Field, showed a flush of 3 bbls.

Tennessee

Reports from the Tinsley's Bottom Field of Clay-Jackson Counties, Tennessee, is that the new field produced approximately 3,000 bbls. of oil for the month of January with 10 wells on the pipe line. This includes some flush production, so that it is only guess work on getting the exact daily average per well. A well-posted oil man states that expectations are for a big development in Clay County. He expects to see quite a number of small pools developed, but does not look for one pool to connect up with another. Isolated pools are looked for from time to time as development goes along, each producing a nice volume of oil. At present the county does not require any further pipe line extension, unless some productive area is developed to warrant the expenditure and a surety that the pool or pools are stable, otherwise the oil can easily be hauled by truck from the lease tanks to the pipe line station of the Stoll Oil & Refining Co. on one of the main highways in Tennessee.

Clay County developed another dry hole in a test well drilled by unknown parties on Stillhouse Creek, southwest of Willow Grove, on the south side of the Obe River.

Fourteen miles west of One da. at the head of Wolfe Creek, in Fentress County, Phelps and others drilled a wildcat duster.

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AMERADA CORPORATION

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PRODUCERS of CRUDE OIL and
NATURAL GASOLINE

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TULSA, OKLAHOMA

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BAKER DRILL PIPE FLOAT

By floating the drill pipe down the hole, it relieves the derrick and other equipment of the strain due to the extra weight, and makes deep drilling safe and efficient. Inserted between tool joints, it is easily inspected at frequent intervals. This is the tool that has made possible some of the world's deepest wells.

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CANADA EXPLORATIONS FOR THE PAST YEAR

(Continued from page 122)

high grade naphtha will be considerably in excess of the entire crude petroleum production of the Dominion of Canada for the same period.

Marketing the Product

Steps were taken by the Royalite Oil Co. to market both the crude naphtha and natural gas production; with the result that a 4-inch oil line was laid from the field to the Imperial Oil, Ltd., refinery at East Calgary to handle the crude naphtha. The Canadian Western Natural Gas Co. of Calgary will handle the natural gas, supplementing its supply from the Bow Island, Foremost and other Southern Alberta fields, and this company has laid a 10-inch pipe line from the field to Calgary, to transport the gas. As an incidental result, the gas rate in Calgary, Lethbridge and other communities has been reduced; and these communities have now available a supply of natural gas for industrial as well as domestic purposes. To make the gas available for domestic use, the Royalite Oil Co. has provided a $250,000 scrubbing plant which extracts the sulphur from the gas.

In addition to these projects for marketing its proven production, the Royalite Oil Co. in 1925 went ahead with the further testing of the Turner Valley Field. Two new wells were started this season. At last reports Royalite No. 5, a half mile from No. 4, was down 2,525 feet; while No. 6, about 1½ miles distant, was drilling at 2,170 feet. Several other companies already in the field have been more or less active, and some new drilling has been started. A test by Vulcan Oils, Ltd., of Vulcan, Alta., close to Royalite No. 4, got a show of oil around 3,200 feet, but is being deepened for commercial production, which is expected at about the same horizon as the Royalite No. 4; that is, 3,740 feet. Advance Oil Co. has taken over and is deepening the old "Acme" well, and reported a show of oil at 3,160 feet. MacLeod Oil Co.'s No. 2 on Section 1-20-3w4, is reported drilling below 2,500 feet, and the Big Chief Oil Co., Section 5-20-2w4, is below 1,000 feet. A number of other companies have been active in leasing, and in more or less definite preparations for actual drilling. Some steps have also been taken toward a reorganization of the Southern Alberta enterprises by a newly organized company, Premier Oils, Ltd., in which it is understood Imperial Oil, Ltd., is interested, with a view to further testing the Southern Alberta holdings where some light oil production has already been secured.

Till some of these later drilling tests are completed, it cannot be definitely said whether the Royalite No. 4 is an isolated freak, or marks the beginning of an extensive new field. Several of the wells now drilling should reach the chief productive horizon in the Madison lime (3,740 feet in Royalite No. 4) by the middle of spring, if not earlier.

Irma-Wainwright Field

Meanwhile, the developments in the Turner Valley Field distracted attention, and probably considerable capital, from the Irma-Wainwright Field east of Edmonton, where in 1923 and 1924 British Petroleums, Ltd., of Vancouver had secured some promising oil showings in two wells. One of the British Petroleums' wells was credited with a flush production of 200 bbls. a day or better, though the oil was a heavy asphaltic product of say 12 to 14 specific gravity. British Petroleums, Ltd., continued work in this field in 1925. No. 3 well on Section 29-45-6w4, had to be abandoned owing to drilling difficulties; but No. 3-B, drilled on the same section, was completed this season, securing a fair production of crude oil of somewhat better quality around 19 specific gravity. Several other companies have unfinished tests in this field, but no definite results were secured by any of these in 1925.

Imperial Oil, Ltd., in addition to the work carried on by its subsidiary, the Royalite Oil Co. in the Turner Valley Field, was active in two areas in Alberta, the foothill belt, and the Sweetgrass district near the Montana boundary. In the northern foothills west of Edmonton, its Coal Spur No. 2 well was last reported at 3,985 feet, with some tools lost in the hole. In the southern foothills, west of Nanton, the Rice Creek well drilled by Imperial Oil, Ltd., was setting 8-inch casing at 4,025 feet. Neither of these wells had secured commercial production; though structurally both areas were regarded as very promising.

Wildcatting Sweetgrass District

In the Sweetgrass district, east of Coutts, the Canadian Oil & Refining Co. of Lethbridge, which in 1924 got a large gas production in its Rogers-Imperial well on Section 29-1-11w4, in 1925 deepened this well in the hope of securing oil. The drilling was carried to 2,804 feet, encountering additional gas, but no commercial oil production. About a mile further north Imperial Oil, Ltd., drilled its Dead Horse Coulee No. 2, which, being lower on the geological structure than the Rogers-Imperial, was expected to strike oil. This well, on Section 32-1-11w4, got only small traces of oil and later encountered sulphur water, and had to be abandoned. Late in the year Imperial Oil, Ltd., rigged up a new test at Erickson Coulee, some 30 miles east of Coutts, on Section 8-1-12w4; but actual drilling on this well will not commence till the spring of 1926.

Close to Coutts, on the Quarantine Reserve, Section 4-1-15w4, Urban Oils, Ltd., of Calgary took over a test left unfinished by the Moodie Syndicate some three years ago; and this well at last reports was drilling around 2,570 feet. These various tests in the Sweetgrass district are trying out the possibility of an extension northward into Alberta of the Kevin-Sunburst Field in Monana.

Imperial Test in Medicine Hat

An important new test was that started in 1925 by C. E. Roth and associates of Independence, Okla., in the Medicine Hat Field. This test was drilled under arrangement with the city of Medicine Hat, whereby the city would take over any gas production, while the Roth Syndicate would handle any oil; and it was planned to drill 3,000 feet or more with a view to testing the possibilities of commercial production below the Medicine Hat sand. The test, after being carried deep enough to show that the Bow Island gas sand was not present, struck a heavy flow of water around 2,500 feet. This was partially shut off and drilling continued to about 2,840 feet, where a heavy gas flow, estimated at 10,000,000 feet a day, was struck in the Dakota sand. This however, speedily dropped to less than 5,000,000 feet a day.

There was some activity in 1925 in the Many Island Lake Field, northeast of Medicine Hat. Many Island Oil & Gas Co., after encountering considerable gas and traces of oil in their Drazen No. 1 well, is continuing it as a diamond drill test. Community Oil Wells, Ltd., Section 19-14-1w4, is deepening its still unfinished test. The work in this field has not, however, gone far enough to furnish conclusive results.

Good Gas Wells

In natural gas production, the Northwestern Utilities, Ltd., which supplies Edmonton from the Viking Field, this year completed its No. 11 well with a reported natural gas flow of 10,000,000 feet a day. Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary finished two wells in the Foremost Field, No. 5 with around 10,000,000 feet and No. 6 with about 2,000,000 feet a day. Though this field has an initial open flow of 49,500,000 from six wells, the small production from No. 6 indicates that it may not prove as large and permanent a natural gas reservoir as had been anticipated.

Drilling Deeper at Ft. Norman

Outside Alberta, Imperial Oil, Ltd., this season sent a drilling crew into the far north, to continue work on its Discovery No. 2 well, 53 miles below Fort Norman. Discovery No. 2, drilled the previous season to more than 900 feet, was this year continued to 1,602 feet, when work was shut down for the year

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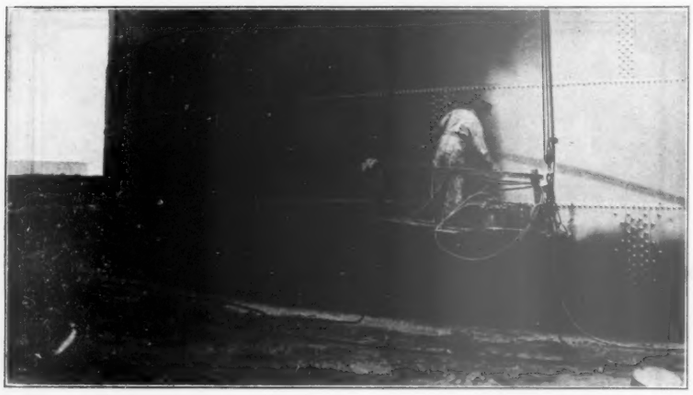

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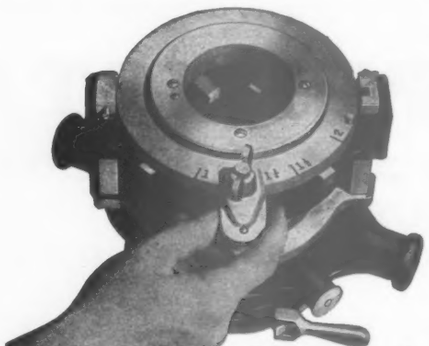

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An oil production of 140 bbls. a day was encountered, chiefly from a sand at 1,063 feet. The results of several years work in this area indicate that small productive wells may be secured within a restricted area; but that any field sufficiently large to make immediate marketing profitable is decidedly unlikely.

Quiet in Eastern Fields

In eastern Canada, the Ontario fields were rather quiescent, very little drilling having been reported. In the older producing fields of Petrolia, Oil Springs, Bothwell and other areas the decision of the Dominion Government to discontinue the crude petroleum bounty was regarded as likely to hasten the end of these steadily declining fields. Most of the 1925 drilling in Ontario was carried on by the natural gas companies, with a view to replenishing their supplies. In Norfolk County the Dominion Natural Gas Co. and the Medina Natural Gas Co. have developed a small field near Courtland, where some eight producing wells have been drilled, and where development work is being continued. In the old Tilbury Field the Union Natural Gas Co., early in past year, drilled three small gassers, but devoted most of its attention to cleaning out its old producing wells.

In Dover Township, Kent County, the Union Natural Gas Co. also completed its No. 19 test of the Trenton limestone, which through drilled to the granite proved a complete failure. Of 19 deep wells drilled by the Union in this area, only seven have proven productive; while something like a dozen tests by other companies secured only two or three small producers.

North of Thamesville Luke Smith and associates have been drilling a shallow test for oil. In the same area the Colchester Oil & Gas Co. has taken over the E. P. Rowe properties, cleaned out the producing wells, and is planning a deep test. In Brant County, Senator Michener and associates have started a test on the lands of the Six Nation Indians, north of Toronto, near Maple. Toronto interests have carried a test to the unusual depth of 4,600 feet.

The most important new development in the east has been the decision of the Henry L. Doherty interests of New York to test Prince Edward Island for oil. Under an option originally secured by H. J. Mackay of Sapulpa, Okla., the Doherty interests this year carried on extensive geological surveys, with the result that an extensive territory was retained for drilling, and, early in December, actual drilling was started on the first well near Charlottetown. Prince Edward Island is a practically untested area where prospects for commercial petroleum production seem to be reasonably good.

CENTRAL WEST

(Continued from page 64)

in the Allendale Field of this county that should have been completed and on the pump.

The latest sensation in the Wabash County area is the new well completed by George Miller and others on the Ed Bass farm of 41 acres, being the north half of the southwest quarter of Section 19, Friendsville Township, a mile east and less than half a mile south of the town of Friendsville and approximately 2 miles south and 5 miles west of Allendale, and more than a mile ahead of production. The top of the sand was found at 1,543 feet and the drill penetrated the sand to a depth of 7½ feet where oil was struck, the hole filling almost to the top after standing over night. The showing created a sensation in the oil industry of the county comparable to that following the discovery of the big Stillwell Pool at least 8 miles away to the northeast last summer, following which there was and still is an unprecedented development. The well on the Bass land was drilled on the west edge of the area marked on the State geological map issued some time ago showing territory in the Friendsville vicinity as likely to produce oil. The Bass well is about a half mile west of the dry hole drilled last month on the Joe Woods farm, in Section 19, which dry hole is located in the middle of the geologically favored area. The Woods well revealed a thick sand, but there was no showing of oil in it.

Formations in the Bass well have right along been running considerably higher than in the Woods well. This gave the owners encouragement which was found to be justified when the drill went into the sand which is described as very fine and dripping oil when the bailer was run after the first screw in the sand. Lying a mile to the east of the Bass well is the Ed Hartwick well, drilled several years ago, which showed a small production. Belief is expressed that the area of good production lies in between the Hartwick and the Woods well, in the territory which includes the new one just drilled in. To the north and northwest are the Matheney wells, Price well, and Ziegler farm wells, small producers.

The Bass well is reported making an excellent showing, but no correct gauge has been announced. Some estimate it as high as more than 200 bbls. while others put it at 100 bbls. flush. Mr. Miller and those associated with him in bringing in the Bass well are opening up a new territory. For a considerable while little attention has been paid to the Friendsville area. He and his company have a large acreage in that section, and other land is under lease. There is expected to be a big rush to the Friendsville section and development on a big scale within a short time. The owners state that as soon as plans are arranged for caring for the production of the new well and it is placed on the pump, the rig will be moved to a new location yet to be made for immediately drilling another hole.

Leasing activities are under way in all directions from the Bass farm well and reports are that nice bonuses have been paid. The school lot is leased, it is reported, for the drilling of a well which is near by. The Bass well is the closest producing well to the well-known river town of Mt. Carmel. To the northwest of Mt. Carmel, in Mt. Carmel Township, Wabash County, the Mt. Carmel Community Oil Co.'s test on the Tanguary farm, Section 7, and 3½ miles south and one-half mile east of the Bass farm, is delayed by an underreaming job, which is being done to lower the casing and drill deeper. Unknown parties are drilling a well south of the Tanguary test on the Fred Sharp farm, same section.

In Wabash Township, Wabash County, Joe S. Young and others' Nos. 1 and 2 on the W. W. Barney farm, Section 1, and in the Stillwell Pool, are both in. No. 1 is said to show for about 2 bbls., with sand topped at 1,387 feet and 4 feet in, while No. 2 was reported dry at a depth of 1,436 feet. This lease is north of the discovery well and in the same section. Same firm's second well in the southwest corner of the D. H. Price farm, same section, is reported dry at 1,426 feet. Vincennes parties are starting a well on the Courter farm, about a mile south of the Adams Corner Pool, just north of the Wabash River, in Section 26. Hupp & Duff's test in the northeast corner of the L. G. Stillwell farm, Section 12, is reported dry at 1,540 feet.

OPERATING CRACKING UNIT

The Peerless Oil & Refining Co. is starting its 1,000-bbl. Jenkins cracking unit at its Chanute, Kans., refinery. The Jenkins unit at the Wilhoit Refining Co. plant at Joplin, Mo., started operating since the first of the year. The Kanotex Refining Co. has started the construction of an additional unit at its Arkansas City, Kans., refinery.

JANUARY AUTO OUTPUT

Continued strong activity in the automobile business is indicated by the production figure of 333,727 cars and trucks in January reported to the National Automobile Chamber of Commerce. This is 38 per cent above January, 1925, when the output was 241,062.

ECONOMIC LOSS IN PRODUCING INDUSTRY

(Continued from Page 80)

association of producers under unified control.

Calls Small Producer Misfit

The small producer is an economic misfit in the oil industry. He seldom attains a degree of efficiency in production technique comparable with the large producers. Lack of adequate capital often compels him to produce and sell oil in excess of legitimate needs of the consuming industries, demoralizing markets and compelling others to match his ill-advised efforts, leading at times to large quantities of oil being sold below the cost of production. Such circumstances also breed wasteful conditions.

An economic study of the California petroleum producing industry made a few years ago by the Federal Trade Commission, indicated that the average large producer (with an output of 1,000,000 bbls. or more per year) is able to produce oil for 43 cents per barrel with a capital investment of $2.79 per bbl. of annual production, while the oil produced by the average small operator (having an output of less than 50,000 bbls. per year) under similar conditions, costs $1.21 per bbl. and the capital investment per barrel of annual production is $10.52. It is apparent there is a considerable advantage in the larger scale of operation. It results through reduction of overhead charges, greater efficiency of personnel, large-scale buying of equipment and other economies that may be realized only by the larger and better organized producing companies.

We could discuss many other minor causes of economic loss in the petroleum producing industry: evaporation and seepage losses of oil, wastage of natural gas, inefficiency in power development and application, fire losses, accident losses, losses incurred in providing storage for oil produced in excess of market needs and interest losses on oil prematurely produced—all important items of economic waste, in part, preventable losses.

Most of the losses incurred can be avoided by intensive technical study of the operations involved in oil production and of the surrounding controlling factors. The application of technology to the oil industry is yet in its infancy. Only through organized research and engineering skill can efficiency be increased. Securing two barrels of oil where today only one is produced, making one barrel serve where two were formerly required: this is true conservation, the only kind most of us would care to endorse.

COOPERATION WITHIN INDUSTRY MOST EFFECTIVE

(Continued from Page 76)

country are of great national importance and that every possible effort within our present economic requirements should be made to prevent waste and to protect, so far as possible, the probable needs of the nation in the future; second, that you request the American Petroleum Institute, and the petroleum industry, to create an organization to conduct a nation-wide campaign to prevent waste by cooperative effort.

Invites United Effort

It would call into action a united effort of the best talent in the Nation to solve the problems. The procedure probably would be, using California as an example to select the heads of the most active operating companies of the State as a permanent conservation board. This board would be responsible to the public and to the industry that all known methods of preventing waste be employed in the oil fields of the district. The board in turn would appoint a committee, selected in each pool or district from the general superintendents actually residing in the district and in daily contact with the work.

It would be the duty of these local committees to make periodic inspections, study and recommend improvements—the recommendations to be determined by a majority, and the producers requested to install the improved method. If any operator failed to comply with the requests of the committee, the circumstances of refusal would be published.

There is a wide feeling that we have been unjustly criticized in pursuing wasteful methods. A large number in the industry are anxious to do anything within their power to create a better public opinion. There are many men anxious to perform any public service, and back of this suggested plan there would be a number of dominating human characteristics, self-preservation, fear, vanity and pride. Because of the many abstract problems involved, 95 per cent or more of those in the industry believe any kind of governmental regulation or direction of a positive nature would be destructive to the industry.

Such a movement would bring into action the volunteer service of the very best talent and knowledge. It would involve local pride in each district or pool. The result would not only take care of preventable waste, but would create orderliness and efficiency.

There would be a tendency on the part of the industry as a whole to criticize districts where actual waste occurs, because of its effect upon the whole industry. Such criticism would be constructive. The spirit of fairness would prevail for each retaliation in unjust criticism.

I recognize that one of the most important problems under consideration by your board is to secure a greater recovery from our oil sands than is now possible under known methods. I do not recognize that any actual waste has occurred by failure to secure greater recovery. The deposits themselves are still available for further recovery when improved methods or increased prices justify further action.

During periods of rapid development on town lots or small ownership lands all kinds of impractical plans have been proposed for some kind of governmental legislation. I recognize that such drilling activity has resulted in excessive costs, and in some instances many wells have been drilled where one would have recovered most of the oil. But I do not recognize that the product itself in any manner has been wasted. If this statement is doubted, I suggest you have the Geological Department prepare figures of recovery per acre in every pool where excessive drilling has been done—such as the original pool in Los Angeles, Spindle Top, Breckenridge and others in Texas, Signal Hill, Santa Fe Springs and others in California—and I think you will find the result will compare favorably with any other developed district as to number of barrels per acre recovered.

To Prevent Gas Waste

There has been a great deal of criticism, and some of it justified, in the waste of gas in the early development of many of our pools. This offers a field of practical research. Many believe surplus gases, after the gasoline is taken out by absorption and compression, could be pumped back into the strata, or into adjoining, nearly-exhausted fields, resulting in greater recovery. But any hard and fast rules might prove dangerous; in some instances where the pressure would be too great, it might result in fracturing casing, flooding the fields with water, or pumping the gas into barren strata. On the other hand, with local conditions favorable, I have no doubt practical results could be obtained.

I recommend to your board, if your investigation justifies it, that you request the petroleum industry to finance and conduct investigations along the lines of pumping gases back into the strata from which they came, or into nearly exhausted pools.

I urge caution in recommending legislation at this time regulating the industry through any kind of governmental commissions, bureaus or departments. And above all, I do not recommend legislation, giving discretionary power to any

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Government official; this brings on favoritism, turmoil and contention.

I could point out numerous instances where State legislation honestly intended for a good purpose has resulted in contention, costing millions of dollars and in the aggregate did more harm than good. If your investigation leads you to conclude that legislation is necessary, extending to some kind of governmental authority to improve operating conditions, I would much prefer that you ask for authority to shut down the entire district and suspend operations until the producers themselves formulate plans to comply with methods desired through cooperative effort, rather than to attempt any correction by general rules and regulations covering the whole country.

If it is found desirable to restrict activities during periods of overproduction I believe much could be done by restricting drilling through agreements, if it were not for the fact that such agreements would be a violation of our existing laws. In the past these laws have prevented even the discussion of this subject between competing operators. Any action restricting production will sooner or later be reflected in increased prices, and I am doubtful whether or not any action removing restrictions in this respect would be wise, in view of the probability of being misunderstood and criticized by the public.

NORTH CENTRAL TEXAS --- HAD FRUITFUL YEAR

(Continued from Page 94)

pleted, is making about 25 bbls. daily from a sandy lime formation at 2,175-2,270 feet. Drilling deeper the Republic encountered a heavy flow of sulphur water, plugged this off, unsuccessfully though, and has been trying to make a commercial well from the sandy lime.

Leases from a half mile to 2 miles of this well went sky high and several new operations were started. So far only one has been drilled to a sufficient depth, that of the Kirby Petroleum Co. to the west of the discovery on the Union Land Co. leases. Apparently it has suffered about the same fate as the discovery well, though it has never encountered a pay formation. Its commercial possibilities seem to have been drowned in a flood of sulphur water.

But even the first few months of the new year may bring something highly commercial out of these discoveries. The Marland Oil Co., Humphreys Corp. and the Humble Oil & Refining Co. are drilling in the vicinity of the World discovery and The Texas Co., Plateau Oil Co., Independent Oil & Gas Co. and others are drilling in the same general district as the McCamey & Johnston discovery in Upton County. Time alone can tell whether these discoveries will point the way to commercial oil fields.

On November 15 another possibility was opened up in a western county by Fred Hyer of Fort Worth, drilling on the Clay ranch in southeastern Howard County. This well encountered an oil sand at 1,526-66 feet that is now producing at the rate of 25 bbls. daily, though not completed. This showing created less excitement than either the Crockett or Upton County strike, but it may hold even greater possibilities.

Panhandle Looks Better

Wildcatting in the Texas Panhandle yielded better returns in 1925 than during any previous year. Hutchinson County took the lead, especially during the latter half of the year and this county holds an unusual record for percentage of producers among the year's completions. During the year there were 17 wells completed in Hutchinson County, not one of which was a dry hole. All were oil producers, though there were no gushers. The 17 new oil wells had a new production of 2,953 bbls., an average per well of a little less than 175 bbls. One hundred per cent of producers for an entire year is unusual, especially where there is a fair amount of development. Two other counties in the territory reported no dry holes during the year, but they had only a limited amount of development. Potter County had three completions, two oil wells and one gasser, while Classcock County had only one completion which was a small producer, that is now abandoned as dry.

Another interesting feature in connection with Hutchinson County is the fact that the wells hold up so well to their initial output. At the beginning of the past year there was less than 200 bbls. production in the county, only 2,953 bbls. of new production was added during the year and today the county has a daily average of 2,440 bbls.

During the past few months Hutchinson County development has centered very largely around two operations. The No. 1 Kingsland of Phillips and associates which opened up one new pool on September 21, with a 300-bbl. flush well at 2,799-2,850 feet, has been the center of considerable development.

Farther to the north and on the banks of the Canadian River, Devore & Latimer, drilling for the Gibson Oil Corp., opened up what is regarded as a new pool, in the G. A. Whittenburg No. 1 on November 27. The pay formation was found at 2,883 feet and drilled to 2,930 feet and a flush production of 250 bbls. was obtained.

Early in the year, February 23, one other small pool was opened up in the Texas Panhandle, in Wheeler County. Whittington and others drilling their No. 2 on the Williams & Laycock encountered a pay at 2,190 feet and when drilled to 2,220 feet the well produced flush at the rate of 125 bbls.

One other rank wildcat discovery is reported for the year. It is the Rasmussen Pool in southwestern Palo Pinto County, where the Pender Production Co. on June 17 brought in a 355-bbl. well in its No. 1 Rasmussen at 3,455-70 feet. As yet no other producers have been completed in this pool, six months after the bringing in of the discovery well.

While there were many other new pools opened in the territory these scant half dozen small discoveries constitute the sum total of wildcat accomplishments for the year. The others were all in well defined oil producing areas. Thus it can be seen the wildcat efforts during the year actually summed up comparatively small results.

Archer County Preeminent

Archer County stand out as the most important district in the whole of the North Texas territory. It led in the number of completions, accounting for more than one-fourth of all the completions in the entire territory. It also led in the discovery of new pools and ranked second in the amount of new production for the year, being surpassed only by Reagan County in this respect.

During the year at least 10 new producing pools were opened up in Archer County. They were characteristically small in area and rich in production. These pools, apparently are all more or less related to some other pool, and a large part of the county is a rambling series of small oil pools.

The first half of the year was spent mostly in developing pools that were uncovered during 1924, the first new discovery for 1925 coming on June 13 when the Norday Oil Co. opened up the Norday Pool with its No. 1 Anderson with a flush production of 425 bbls. from sand at 1,410-15 feet.

On September 10, Jones and others opened up what is known as the Darilek Pool, 2 miles south of the town of Megargel in Archer County. The No. 1 Darilek produced 215 bbls. flush from sand at 1,397-1,406 feet and the No. 2 produced 85 bbls. from sand at 1,419-29 feet. The two wells are only one location apart.

The Sun Oil Co. opened up its Richardson Pool just south of the town of Megargel on October 15. The first well was No. 1 Richardson, which had sand at 1,435-40 feet, with a flush production of 125 bbls. A mile northeast of this pool, Cook & McElreath have just opened up a new pool on the Kruger lease. Sand was found at 1,418 feet and at 2 feet in the well is making flush 150 bbls. While this discovery was made about January 1 of 1926 it might be considered along with the past year's work in Archer County.

A pool of rather doubtful proportions was opened up in South Archer County on October 25 by the Terminal Oil Co. on the Falls County School Land survey. The well was the company's No. 2 Falls County, which had a flush output of only 15 bbls. from sand at 1,175-82 feet.

Another south Archer County pool is the Texhoma Oldham Pool, opened up by the Texhoma Oil & Refining Co. with its No. 1 Oldham on November 5. Sand was encountered at 1,340 feet and at 3 feet in the pay the well produced flush at the rate of 125 bbls.

The Wilburn Pool of Green and others, 3 miles south of the town of Megargel, was a late discovery. The discovery was their No. 1 with sand at 1,345-53 feet, with a flush production of 90 bbls. The discovery was made on November 21.

The only other south Archer pool is the Lauster Pool opened up by the Mahlstedt Oil Co. on December 15. The No. 1 Lauster had a flush output of 25 bbls. from sand topped at 1,181 feet and drilled into 5 feet.

Norwood and associates opened up a small pool in north Archer County on October 20 in their No. 1 May Rutty, in sand at 881-904 feet with a flush production of 15 bbls. daily.

Early in November the Hutcherson Pool, which gives promise of being one of the more prolific pools of the north half of the county, was brought in by Caldwell and associates. Their No. 1 Hutcherson made 140 bbls. flush in sand at 1,365-76 feet.

On December 15 a quarter mile eastern extension was effected to the Sunshine State Pool in north Archer. The No. 1 Brown of Burns and others got a 45-bbl. well in sand at 1,590-97 feet.

Five Good New Pools

The year accounted for five good new pools in the shallow sands of northern Young County. The first was the Gambrell Pool, 5 miles north of the town of Olney, opened up on January 1 by Murchison & Fain in their No. 1 Gambrell with a flush production of 435 bbls. from sand at 1,200-17 feet. Then followed the Litchfield-Madden Pool on January 3, to the east. The discovery well was the Simms Oil Co.'s No. 1 Carpenter, with a flush production of 100 bbls. from sand at 1,018-27 feet.

Next came the Wilson Mercer Pool, in the same general territory, also opened up by Murchison & Fain. The first well was the No. 1 Wilson of these operators with a flush production of 40 bbls. from sand at 1,085 to 1,092 feet. On the Mercer lease adjoining the Humble Oil & Refining Co. got wells that made as high as 400 bbls. flush from the same sand.

On October 1, the Olney Townsite Pool was discovered. The first well was the No. 1 Dyer of Allen and others on the townsite. Flush production was at the rate of 60 bbls. daily from sand topped at 1,020 feet and drilled into 12 feet.

Young County accounted for one other shallow pool, and a very prolific one at that in the northeastern part of the county. This was the Campbell Pool opened by the Texhoma Oil & Refining Co. and the Camp Oil & Gas Co., the discovery being No. 1 Campbell. Sand was encountered at 895 feet and at a total depth of 902 feet the well made 200 bbls. Much larger wells, some of them making as high as 300 and 400 bbls. flush, have been obtained by the Tidal Oil Co. and the Texhoma Oil & Refining Co. by drilling deeper into this same sand.

Wilbarger's Good Record

Wilbarger County accounted well for itself in the matter of new production for the year. The county had a total of 45,890 bbls. of new production in 1925, ranking third in that respect, being surpassed by Reagan and Archer Counties. The field now has a daily average output ranging between 15,000 and 16,000 bbls.

There are only two important producing areas in the county, the South Vernon Pool and the Landreth Pool, 4 miles southeast of the South Vernon Field proper. The Landreth Pool is largely a product of 1925. This pool has five distinct sands and the pool is practically controlled by the Landreth Production Co. with its large leaseholdings on the W. T. Waggoner ranch. There are five distinct sands in this pool, ranging in top from 1,851 to 2,356 feet. The Landreth Production Co.'s No. 1-A Waggoner is producing from the upper sand at 1,851 to 1,865 feet. It was drilled early in September and had a flush production of 230 bbls. The No. 1-F Waggoner of the same company, drilled in October 5, produces from the second sand at 1,885 to 1,900 feet and makes 300 bbls. flush.

The No. 3-F Waggoner, drilled in December 1, is producing from the third sand at 1,915 to 1,930 feet and has a flush of 310 bbls. daily. The No. 3-B Waggoner of the same company drilled early in September is making 130 bbls. from the fourth sand at 2,085 to 2,092 feet and the company's No. 1-M Waggoner drilled in on November 10 is producing from the fifth and last sand at 2,355 to 2,385 feet. This well had a flush output of 90 bbls. daily.

A new development of very much importance is also recorded in the South Vernon Pool. It is the new deep pay formation, a sandy lime formation referred to as the saturated lime, ranging in depth from 2,350 to 2,450 feet. The first wells in the field produced from sands above this lime formation. The first well to drill to the saturated lime was the No. 9 Stephens of Bridwell and others on September 15 of the past year.

The first production obtained was 100 bbls. daily but this later increased to 500 bbls. and wells drilled to the same formation later have produced as high as 900 and 1,000 bbls. and at least one produced 1,600 bbls. daily for a short time. This deep lime formation is responsible for much of the new flush production in Wilbarger County.

Wichita County recorded the discovery of only one important new pool during the past year. That was the Mitchell Pool, which was brought in by Craig and Roberts on May 15, when they drilled in their No. 1 Mitchell. Sand was encountered at 1,500 feet and with only 2 feet of pay drilled the well made 120 bbls. daily flush.

Three New Pools in Stephens

The discovery of three new pools were recorded in Stephens County. The first of these was the Barney Carter Pool in the extreme south part of the county and just north of the town of Ranger in Eastland County. The first big producer was the No. 1 Pritchard of Barkley and associates, drilled in on April 25 with a flush production of 1,960 bbls. from the Ranger sand at 3,535 to 3,540 feet. The first producer in this area, however, was on older well, the No. 1 Langford, of Barney Carter, which was only a 300-bbl. flush well. It was a mile north of the Barkley well on the Pritchard.

On December 10 the Ming Pool, discovered early as a big gas area by Livingstone and associates of Fort Worth, developed some oil possibilities when the Texas Pacific Coal & Oil Co. drilled in its No. 3 Hand Account 2. The well made 250 bbls. from sand at 3,695 to 3,700 feet. A higher sand at 3,400 to 3,410 feet produced gas wells with a capacity of 30,000,000 cubic feet daily. The Ming Pool is about 3 miles northwest of the Barney Carter Pool.

On December 15 the Landreth Production Co. brought in its No. 3 Gratz with

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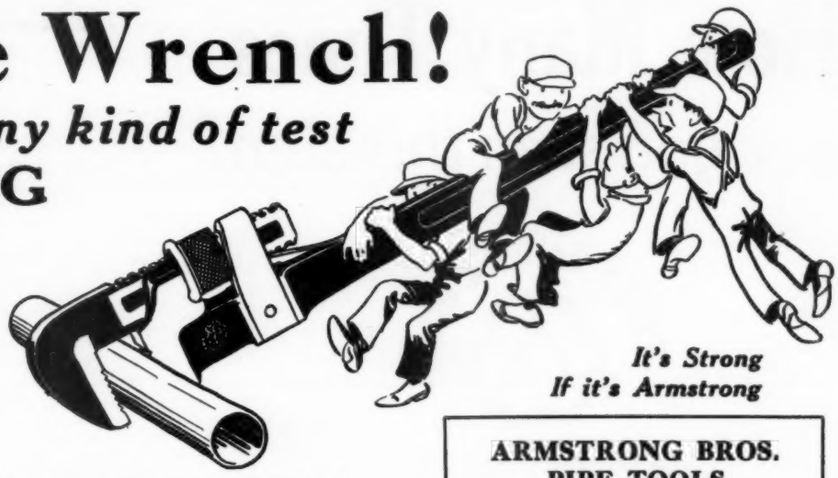

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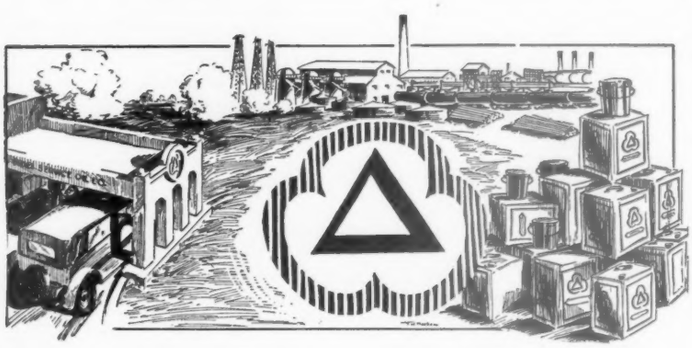


The Empire Companies

a flush production of 1,285 bbls. from sand at 3,130 to 3,145 feet. This new Gratz Pool is also in the south part of the county.

Southeastern Callahan County records the only other new pool of importance anywhere in the territory. This is the Cross Plains Townsite Pool, a semi-wildcat district, 4 miles west of the old Pioneer Pool in Eastland County.

Cross Plains Development

The discovery well in the Cross Plains Pool was the No. 1 McDonough of Mook & Wakefield, just on the southern outskirts of the town. The well was drilled in on July 25 with an initial production of 90 bbls. from sand at 1,426 to 1,433 feet. Development rapidly spread north onto the townsite and wells usually had flush production from 100 to 400 bbls. The largest producer was the Kirk and Brewer well on the Baptist Church lot which made 975 bbls. daily.

The record of completions in this territory for the year shows a total of 3,884, with new production totaling 312,832 bbls. There were 1,466 dry holes completed and 98 was wells, leaving 2,320 oil producers, with an average flush production of a little less than 135 bbls. per new well.

Archer County led in the number of completions with a total of 1,301, while Wichita County was second with 650, Young third with a total of 550 and Wilbarger fourth with a total of 349 completions. Stephens County had 205, Eastland, 137; Brown, 133; Callahan, 91, and Reagan County, 75. Reagan County led all others in new production with a total of 78,742 bbls. from 53 new oil producers, giving the new wells an average flush production of about 1,485 bbls., by far the largest average per well anywhere in the territory.

Taken by months, August was the banner month with a total of 407 completions. October had 399 completions, April 381 and September 366. May led all other months in the matter of new production with a total of 37,629 bbls.

The following table shows the completions in North Texas territory by months:

NORTH CENTRAL TEXAS

Completions By Month in 1925

	Comp.	Prod.	Dry	Gas
January	193	18,072	68	6
February	207	18,710	87	3
March	291	22,229	114	8
April	381	31,272	137	9
May	344	37,629	136	7
June	321	32,367	104	7
July	364	24,074	140	9
August	407	23,660	152	8
September	366	22,614	145	4
October	399	32,265	146	11
November	315	22,810	126	11
December	296	27,130	111	15
Total, 1925	3,884	312,832	1,466	98
Total, 1924	2,814	227,209	1,047	75
Difference	1,070	85,623	419	23

Completions By County

County—	Comp.	Prod.	Dry	Gas
Wichita	650	17,357	212	0
Wilbarger	349	45,890	94	2
Archer	1,301	73,713	479	0
Young	550	36,316	244	0
Stephens	205	21,781	82	26
Eastland	137	4,820	47	18
Brown	133	7,125	41	5
Reagan	75	78,742	20	2
Callahan	91	8,607	24	3
Baylor	41	800	32	0
Clay	33	135	28	6
Throckmorton	46	520	36	6
Shackelford	56	2,751	31	3
Mitchell	29	3,130	6	0
Palo Pinto	20	45	18	3
Hutchinson	17	2,953	0	4
Carson	24	5,745	4	2
Montague	41	1,562	14	3
Coleman	6	0	4	2
Wheeler	8	140	4	3
Gray	5	160	2	2
Crockett	6	45	4	1
Irion	5	0	5	0
Sterling	6	0	6	0
Comanche	4	0	4	0
Potter	3	418	0	1
Scurry	3	52	1	0
Cooke	3	0	3	0
Val Verde	2	0	2	0
Erath	2	0	1	1
Taylor	2	0	2	0
Upton	2	0	2	0
Wise	2	0	2	0
Glasscock	1	25	0	0
Somervell	1	0	1	0
Johnson	1	0	1	0
Runnells	1	0	1	0
Fannin	1	0	1	0
Denton	1	0	1	0
Ector	1	0	1	0
Foard	1	0	1	0
Kent	1	0	1	0
McCulloch	1	0	1	0
Moore	1	0	1	0
Tom Green	1	0	1	0
Martin	1	0	1	0
Jack	1	0	1	0
Loving	1	0	1	0
Concho	1	0	1	0
Parker	1	0	1	0
Grayson	1	0	1	0
Garza	1	0	1	0
Reeves	1	0	1	0
Terrell	1	0	1	0
Hudspeth	1	0	1	0
Total, 1925	3,884	312,832	1,466	98
Total, 1924	2,814	227,209	1,047	75
Difference	1,070	85,623	419	23

N. LOUISIANA-ARKANSAS

(Continued from Page 48)

11 Johnson, Section 3-16-15, at 250 feet; Unity Petroleum Co. tested dry at 1,998 feet and arranging to deepen No. 4 Berry, Section 33-15-15, and has derrick up for No. 8 Umsted, Section 33-15-15.

In the Stephens district, Ouachita County, the Buffalo Oil Co. has set 6-inch at 1,436 feet in No. 4 Morgan, Section 22-15-19; J. E. Crosbie is rigging up to drill No. 1 Wallace, Section 27-15-19; Gossett and others set 10-inch at 80 feet in No. 1 Gosden, Section 21-15-19, and tested salt water with a small show of oil at 1,487 feet in No. 1 Thompson, Section 22-15-19, and arranging to abandon. J. D. Reynolds is rigging up to drill No. 1 Davis, Section 22-15-19.

Equity Oil & Development Co.'s No. 1 Morgan, Section 27-15-19, is shut down at 1,480 feet, and Gossett and others cored salt water sand in No. 1 Davis, Section 26-15-19, and it is shut down at 1,560 feet.

Bellevue Field

Humble Oil & Refining Co. has made a location for No. 29 Bliss & Weatherbee, Section 23-19-11.

Caddo Parish

In the Pine Island district, Dixie Oil Co. is drilling in lime and shale at 3,780 feet in No. 1 Jolly, Section 27-22-15; drilling in lime at 3,537 feet in No. B-2 Noel, Section 13-21-15; set 10-inch at 75 feet, down 295 feet in No. 72 Robertshaw, Section 14-21-15; Fortuna Oil Co. set 10-inch at 144 feet, drilling at 730 feet in No. 24 Raines, Section 22-21-15; bailing at 2,328 feet with 1,400 feet of salt water in the hole in No. 1 Spell, Section 29-21-15; drilling in gas rock at 932 feet in No. 1 Wiley Bradford, Section 24-21-15; Gulf Refining Co. has derrick up for No. 12 Elbert Tyson, Section 14-21-15; rigging up to drill No. E-1 Muslow, Section 35-21-15; Ohio Oil Co. tested hot salt water at 3,829 feet in No. 1 J. B. Ardis, Section 1-21-15; coring lime at 3,697 feet in No. 18 E. K. Smith, Section 12-21-15; The Texas Co. set 12-inch at 300 feet in No. 42 Caddo Mineral Land Co., Section 23-21-15, and has made location for No. B-12 Noel, Section 14-21-15.

In the Oil City district, Fortuna Oil Co. is fishing for cable tool socket at 2,222 feet in No. 15 Doan-Thigpen, Section 5-20-15; went in to drill plug and found casing collapsed, cemented 4-inch and is at 4,023 feet in No. 2 Levee Board, Section 8-20-15; Gulf Refining Co. is drilling in gray sand at 2,366 feet in No. 225 Ferry Lake, Section 21-20-16; set 6-inch at 2,152 feet in No. 226 Ferry Lake, Section 16-20-16; is rigging up to drill No. 227 Ferry Lake, same section, and has derrick up for No. 228 Ferry Lake, Section 22-20-16; D. C. Richardson has derrick up for No. 3 Youree & Randolph, Section 13-20-15; The Texas Co. set 10-inch at 300 feet, down 695 feet in No. 59 Levee Board, Section 33-21-16, and has derrick up for No. 1 Caddo School Board, Section 16-15-12. W. J. Stauffer is coring in sandy shale at 2,742 feet in No. 1 Starcke, Section 17-23-16, near Rodessa. Manie Drilling Co. is drilling at 730 feet in No. 1 Cunningham, Section 15-17-14.

Catahoula Parish

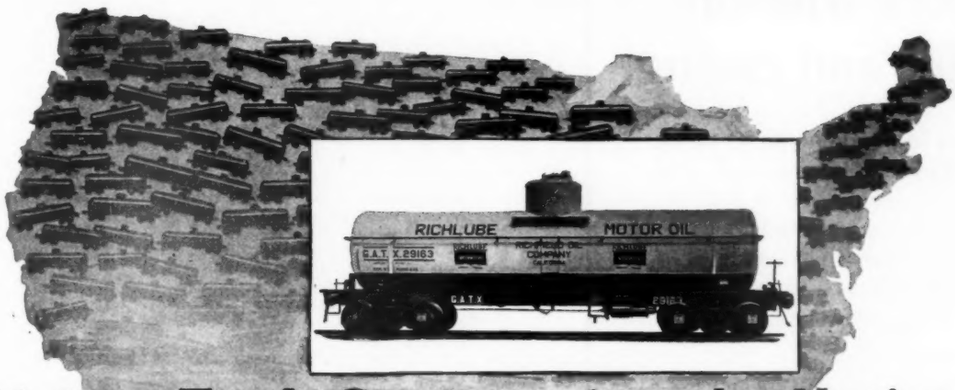
Ferguson & Kimbrough are drilling at 2,100 feet in No. 1 Nichols, Section 21-9-6e. The Texas Co. is drilling in lime at 3,168 feet in No. 1 Harris Hyman, Section 24-8n-7e.

Claiborne Parish

Standard Oil Co. is drilling in hard sand at 1,840 feet in No. 4 Shaw, Section 30-21-7, 4 miles west of Homer. Triangle Drilling Co. in hard shale at 3,365 feet in No. 1 Keen, Section 7-19-5, 10 miles northeast of Gibbsland.

DeSoto Parish

Fortuna Oil Co. is drilling at 1,730



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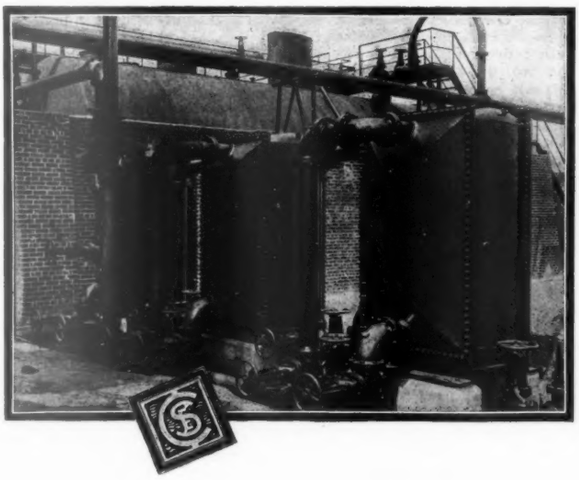

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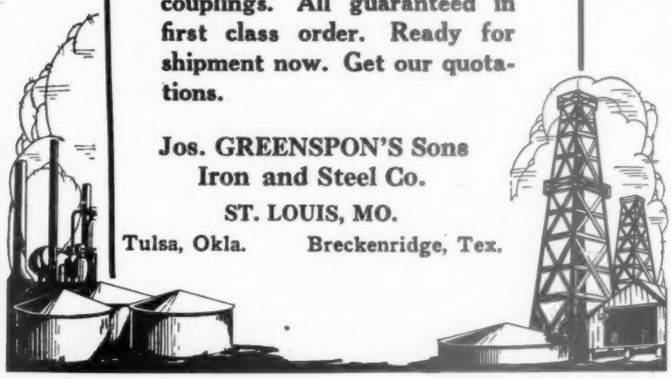

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feet in No. 1 Bond, Section 27-12-11, 8 miles west of Coushatta and 5 miles southeast of the Naborton Field.

LaSalle Parish

Atlantic Oil Producing Co. set 10-inch at 102 feet, 6-inch at 152 feet in No. 2 Tullos, Section 26-10-1e; has derrick up for No. 5 Tullos, Section 23-21-1e; derrick up for No. 8 Tullos, same section.

Ayers and others set 10-inch at 100 feet, down 170 feet in No. 1 Russell, Section 13-10-1e.

O. W. Clark, trustee, is drilling at 50 feet in No. B-1 Russell, Section 26-10-1e; has derrick up for No. 1 Smith, same section; also has derrick up for No. 2 Tullos, Section 23-10-1e.

Daniels and others set 12-inch at 20 feet, drilling at 1,200 feet in No. 1 H. Tullos, Section 28-10-1e.

Dixie Oil Co. has derrick up for No. 3 Urania, Section 14-10-1e, 8 miles west of Jena.

J. E. Freeman has derrick up for No. 2 Gaharan, Section 26-10-1e.

Hamilton and others set 10-inch at 40 feet and 6-inch at 1,523 feet in No. 1 Bennett, Section 25-10-1e; W. W. Hawkins, trustee, set 10-inch at 103 feet, down 1,350 feet in No. 1 Price, Section 25-10-1e, and has derrick up for No. 1 Tullos, Section 26-10-1e; A. E. Hudson, trustee, is drilling at 40 feet in No. 1 Urania, Section 12-10-1e; Hunt and others set 10-inch at 102 feet and down 900 feet in No. 1 Tullos heirs, Section 26-10-1e; Hunt McCurry & Zoder are rigging up to drill No. 1 Urania, Section 7-10-2e.

Louisiana Oil & Refining Co. set 10-inch at 97 feet, down 1,447 feet in No. 1 Bass, Section 25-10-1e; set 10-inch at 98 feet, down 1,380 feet in No. 1 Russell fee, same section; has derricks up for Nos. A-4 Tremont and B-16 Tremont; is rigging up to drill Nos. B-13, B-9, B-10, B-11, B-17, B-25 and B-26 Tremont, and has made location for No. B-1 Tremont, all in Section 29-10-1e; drilling at 50 feet in No. 13 Tremont, Section 25-10-1e; tested dry with a show of oil at 1,553 feet in No. 3 Tremont, Section 30-10-2e.

Love and others set 10-inch at 112 feet, drilling at 615 feet in No. 1 Zimmerman, Section 25-10-1e.

Natural Gas & Petroleum Co. set 10-inch at 105 feet, down 1,290 feet in No. 5 Tullos, Section 25-10-1e; has derrick up for No. 6 Tullos, same section, and tested salt water and going deeper at 1,290 feet in No. 7 Tullos, same section.

Ohio Oil Co. tested salt water at 1,589 feet in No. 2 Urania, Section 14-10-1e; Standard Oil Co. set 10-inch at 112 feet, down 1,235 feet in No. 1 Urania Lumber Co., Section 19-19-2e; Zeigen and others set 10-inch at 105 feet, drilling at 550 feet in No. 2 Urania, Section 18-10-2e.

Morehouse Parish

R. E. Boisseau and others had well to blow out while mudding up, now flowing salt water, claim well set full string of 6-inch at 2,487 feet in No. 1 Sullivan, Section 11-21-7e, 10 miles east and a little north of Bastrop.

Natchitoches Parish

Amerada Petroleum Corp. is drilling in gumbo and streaked shale at 3,002 feet in No. 1 Wafer, Section 3-11-8, 6 miles north of Campti.

Ouachita Parish

J. M. Huber is rigging up to drill No. 7 fee, Section 30-19-5e, 8 miles northeast of Monroe. Palmer Corp. is setting 10-inch at 212 feet in No. 1 fee, Section 24-19-4e, in the Monroe gas field.

Cotton Valley

Fortuna Oil Co. cored salt water and sand at 4,268 feet in No. 1 Bible, Section 8-20-9; arranging to test in 6 feet of sand at 2,690 feet in No. 2 I. Cox, Section 23-21-10. Gulf Refining Co. set 10-inch at 331 feet in No. 1 S. P. D. Coyle, Section 21-21-10.

Humble Oil & Refining Co. is drilling in anhydrite at 4,211 feet in No. 1 R. R. Cox, Section 22-21-10.

Ohio Oil Co. is waiting on standard rig to pump at 2,576 feet in No. 35 Bodcau, Section 21-21-10, with 800 feet of oil and 18 feet of sand in the hole; waiting on standard rig at 2,543 feet in No. 2 Riggins Cox, Section 15-21-10; drilling in lime at 4,175 feet in No. 1 W. Cox, Section 23-21-10; drilling at 1,890 feet in No. 22 Gray, Section 26-21-10; drilling in anhydrite at 4,265 feet in No. 1 A. J. Hodges, Section 23-21-10.

Winn Parish

Cedar Creek Petroleum Co. still shut down at 760 feet in No. 1 Sullivan, Section 8-10-2w.

ARKANSAS WILDCATS

Ashley County

Rhodes & Kirker are trying to get bailer loose at 1,650 feet in No. 1 Bledsoe, Section 20-15-7, half way between Hamburg and Monticello.

Calhoun County

Magnolia Petroleum Co. is reaming to bottom at 3,900 feet in No. 1 Calion Lumber Co., Section 29-15-14, 4 miles east of Smackover production. Southern Crude Oil Producing Co. is drilling at 2,080 feet in No. 1 Freeman Smith Lumber Co., Section 19-14-15, 7 miles north of Smackover production and 12 miles southwest of Hampton.

Columbia County

Magnolia Petroleum Co. is drilling in gumbo at 1,950 feet in No. 7 Rhinehart, Section 13-15-20.

Drew County

McClintock & Goodka, set 6-inch at 1,799 feet, down 1,842 feet with show of oil in sandy shale in No. 1 Olga, Section 35-13-15.

Hempstead County

Burton and others are drilling at 1,550 feet in No. 1 Garland, Section 23-10-25, 4 miles north of Washington. C. W. Robinson is drilling at 2,615 feet, after testing hot salt water, in No. 1 Toner, Section 29-12-23, 4 miles east and a little north of Hope. Arkansas Fuel Oil Co. is waiting on standard rig at 2,790 feet in No. 1 Red River Land Co., Section 18-19-24, 1 mile southeast of Bradley.

Little River County

Mellick Oil Co. is trying to kill water flow at 1,740 feet in No. 1 Hawkins, Section 10-11-31.

Miller County

J. L. Bragdon is drilling in lime at 2,620 feet in No. 1 Wiseman, Section 36-15-27, 8 miles east and a little north of Texarkana. Buzzard Bluff Oil Co. is drilling in broken lime at 2,620 feet in No. 1 Munn, Section 22-14-26, and Humble Oil & Refining Co. has made location for No. 1 Cranks, Section 5-17-25.

Nevada County

Bemis and others are rigging up to drill No. J. D. Ellis, Section 2-14-21, 20 miles north of Magnolia. Humble Oil & Refining Co. made location for No. 1 T. W. Calloway, Section 10-15-22, and Keystone Oil Co. set 10-inch at 100 feet in No. 7 Waters, Section 10-14-21.

Magnolia Petroleum Co. has shut down at 4,470 feet in No. 1 B. F. Johnson, Section 3-15-21, 6 miles northwest of the Stephens Field. Smitherman-McDonald have derrick up for No. 3 C. W. Waters, Section 2-14-21, in the Nevada district.

CALIFORNIA FIELDS

(Continued from Page 46)

donment writes finis to the company's efforts to develop production.

Huntington Beach

The Standard's operations at Huntington Beach were productive of two new wells, both located on Lease B. The largest, also the deepest, was No. 41, a 525-bbl. flowing well. It was drilled to 4,254 feet and finished with a 6¼-inch oil string carrying 550 feet of shop perforated. No. 42, drilled to 2,814 feet and finished with an 8⅝-inch oil string carrying 50 feet of shop perforated, came in doing 320 bbls. daily. The output of the former tests 25.1 degrees with a cut of 2 per cent, while the latter is exceptionally clean and averages 25.8 degrees. The Standard has been doing considerable work on its Lease B, and the results indicate this property will be more productive than believed. Drilling has extended the productive limits westward and several drillers in the northwestern part of this lease and in the western part of the Bolsa Chica prop-

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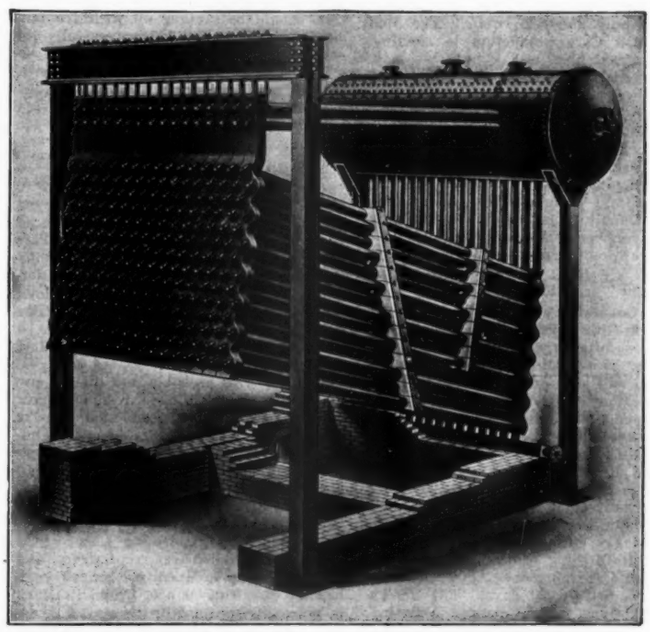

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erty will prove very important as they should establish the outer limits of the field and reveal what can be anticipated between these outside locations and the present productive area.

The United Oil Co. is pursuing an intensive drilling campaign to build up production to meet its increasing demand. This company, controlled by the Hellman banking interests, owns the outstanding capital stock of the Richfield Oil Co., which, during the last quarter of 1925, was third in gasoline sales in California. The Richfield has been engaged in an intensive sales campaign which has kept the parent company on the move to supply sufficient crude to meet its refinery requirements. The United entered the Huntington Beach Field several months ago by purchasing the Pacific Petroleum Corp. and is this week increasing its work by starting rig construction for No. 1 Pacific, at Clay Street and Huntington Avenue. Spud will probably be made during the next 10 days.

Dominguez

The resumption of drilling by the Union and Shell in the Dominguez Field a few weeks ago was surprising and the new location staked for No. 3 Reyes by the latter indicates some additional work is contemplated. Drilling will be kept well in hand, however, and it is not likely either company will run more than three or four strings of tools simultaneously. The Shell is working on No. 31 Reyes and is rigging up No. 32 for an early spud. The Shell stepped out this week at Torrance and located four new holes on its Redondo lease in addition to spudding in No. 13 and finishing No. 7 on the same property. The prospective drillers are Nos. 9, 10, 11 and 12, while the spud was made in No. 13. The company's completion was No. 7, a small 75-bbl. pumper of 15.1 gravity oil from 3,550 feet. The Chanslor-Canfield Midway Oil Co. has three drillers on the Del Amo lease and, although rigs are standing for four more, it is not known how soon they will be spudded in.

There is a very persistent rumor that the Standard Oil Co. will take over the holdings of the McGinley Oil Co. at Montebello soon and, although this could not be confirmed, the McGinley interests are taking inventory. The transaction involves only about 25 wells. The McGinley Oil Co.'s production is running around 3,000 bbls. a day but this may be increased slightly by the completion of two wells now being put down. The Superior picked up a nice showing in No. 1 Manz at Montebello and a string of 11-inch will be landed around 3,465 feet, about 50 feet off bottom. The Standard, in addition to work on the Baldwin and Temple leases, is making preparations to start a new well on both the Harvey and Howard-Smith properties, the preliminary work about completed.

Richfield

The General Petroleum recently resumed drilling operations in the Richfield area, after a suspension of a year or more, by spudding in No. 7 Thompson, and will have another string of tools in operation shortly, as shown by the erection of a new derrick for No. 3 Stern. The Standard's well, No. 20, on Kraemer Lease No. 2, in this field, has been showing oil for some time and, although a rig has been erected for No. 21, it is believed that spud will be held up until No. 20 is on production. The Brea Canyon Oil Co. is again making hole in both of its drilling projects at Fullerton and should, barring mechanical trouble, finish one within 30 days. The Shell's No. 10 Orange, in this district is getting under way at 2,720 feet and it will be 60 days before it will be in a position to make a bid for production. The Birch Oil Co., one of the pioneers at Fullerton, is erecting a steel rig for No. 1-A Olinda and the hole will probably be spudded in within 10 days.

E. L. Blanton was checked early this week at 2,768 feet in No. 1 Gualdine at Coyote and, although the Birch-Royer Oil Co. has been unable to secure commercial production in No. 1 Ninno, a Coyote outpost, it has not become discouraged and will resume drilling at 5,257 feet. Completion of work on the central power plant at Newport early this week and the connecting up of jack lines to several wells resulted in a resumption of production after a shut down of several weeks. Most of the wells affected were shallow ones and belonged to the Julian Petroleum Corp. The Associated is making preparations to start drilling its third diamond core hole on the Hellman property at Seal Beach, several hundred feet southwest of No. 2 Prospect. No. 4 Bryant of the Shell, on a line midway between its No. 1 Bryant and No. 1 Bixby of the Marland, the only two producing wells, is standing cemented at 970 feet, but it is believed drilling will be resumed in a day or so. This new Bryant well is expected to throw some additional light on prevailing conditions. It is reported the Union has closed a deal for a part of the Bryant tract north of the Shell and Marland leases but the lessee and lessor have not agreed upon a drilling policy. The Standard has tentatively located its first well in this area but, since lease requirements do not obligate the company to initiate work immediately, it is problematical whether the company will begin drilling before the policy of the Marland is known.

Midway-Sunset

Operators in the Maricopa flats section of the Midway-Sunset Field are going ahead cautiously and, although no concerted action has been taken toward curtailing development work, most of the companies appreciate the advisability of restricting drilling and are acting accordingly. One or two wells are going ahead and, although already in the brown shale, still have several hundred feet to go. The California Petroleum has three tests in Section 32-12-23, cemented just below the 4,000-foot level, which would throw considerable light on underground conditions if drilled in, but will probably remain on the suspended list for the reason outlined. In the Midway section, the United finished No. 2-A Calidon at 2,968 feet, good for 50 bbls. of clean 26.4 gravity oil daily. The Pacific completed No. 40 in Section 19-31-24, and, while not actually no a production test, should be tanking oil within a few days. The Standard has successfully reentered its No. 10 Kern County, in the Elk Hills Field, which blew out a month or two ago from 4,580 feet and landed a string of 8¼-inch at 3,300 feet. This hole is a deep test in search of a deeper horizon.

Ventura Avenue

There were no completions in the Ventura Avenue Field, although it is expected No. 20 Lloyd of the Associated will come into production shortly. This hole is looking exceptionally promising at 5,440 feet, and a good well is anticipated. The company listed No. 12 Lloyd for abandonment at 4,903 feet some time ago and the rig will be skidded to a new location. The Shell is stepping along with its program in this area and, although it will probably not finish any new wells within 30 days, it should have several ready for production shortly after. The General Petroleum is running two strings of tools, No. 3-A Barnard being down 3,000 feet and No. 10 Notten, a recent spud, standing cemented at 655 feet. The Bolsa Chica's No. 1 Hartman and No. 1 Willett of the Petroleum Securities are drilling ahead at 3,200 feet, and 3,050 feet respectively, and geologists are inclined to believe each has an excellent chance. The Standard is preparing to spud in its second structure hole at Montalvo on the Haydock property, approximately 1,500 feet south of No. 1 Argabrite, recently abandoned at 1,500 feet. The Shell has spudded in No. 1 Berlywood in Ventura County, the present depth estimated around 300 feet. The Chanslor-Canfield Midway Oil Co.'s Ventura County wildcat, No. 1 Hobson, is redrilling at 960 feet, the bottom of the hole being 3,220 feet. The wildcats of the Marland and Milham Exploration Co. in this section are down 2,654 feet, and 1,366 feet respectively.

Southern California Wildcats

The official abandonment notice filed this week on No. 4 DeBaker of the Bandini Petroleum removes the last semblance of wildcat activities in the Bandini area and, although in excess of $1,500,000 was spent in prospecting, nothing was ever found but a few small gas showings. The Marland just passed the 3,000-foot level in No. 1 Connelly near Hyde Park, the present formation being a hard sand. The Union is going ahead rapidly with No. 1 McNally at La Mirada and, although work was only started a short time ago, the well is already down 1,705 feet with a string of 16-inch cemented at 1,600 feet. In the Newhall-Saugus sector, the Marland has a 2,608-foot hole in No. 1 Wickham, while the Milham Exploration Co. has passed a depth of 2,300 feet in No. 2 Conroy. The latter company is about ready to spud in its second Playa del Rey wildcat. The Shell has about given up hope of securing commercial production in its Talbert wildcat, No. 1 Von Schriltz, now at 5,100 feet and an early abandonment would not be surprising.

Northern California Wildcats

The Main Oil Co. has landed a string of 6¼-inch in its Wasco wildcat at 5,276 feet and it is the intention to resume drilling and go down to around 5,450 feet before making a production test. Not many operators give the Main a chance for production but the company apparently does not share this view as a rig has been erected half a mile north of No. 1 and another half a mile west. The company has been very persistent and may secure production, notwithstanding the rather unfavorable opinion. The Chanslor-Canfield Midway Oil Co. has recemented a string of 6¼-inch in its Delano wildcat at 3,800 feet, and it is probable another production test will be made shortly. The Shell is making preparations to start work on No. 1 Vedder in the Mount Poso Creek area, Section 9-27-28. The company has approximately 10,000 acres in this locality and this hole will probably be but one of several to be drilled in testing this large lease.

The Fresno-Madera Oil Co. reports a small showing of oil and gas in its Clovis wildcat at 3,680 feet and, although this has not been checked up, it is possible as minor showings may be encountered at many points in Fresno County. A preliminary pumping test of the Harriman-Jones project in Monterey County failed to result in commercial production and the hole will require further work. The Pyramid Oil Co. recovered from the fishing job which has been holding up progress for several weeks and is making preparations to land a string of 8¼-inch. This wildcat is very promising, as production is anticipated around 2,500 feet. H. N. Witt's No. 2 Docker in wildcat territory at Petaluma, which made an initial pumping of around 25 bbls. from the shallow depth of 964 feet, has been standing suspended, due not to any lack of finances, as reported, but to the fact that the operators would prefer to turn the property over to an efficient oil company rather than undertake further development work themselves.

URGES REJUVENATION OF DEPLETED OIL FIELDS

(Continued from Page 75)

natural pressures, and additional 100,000 bbls. is recoverable under air. However, these properties are hardly representative of average conditions and there are many reasons for believing greater recoveries will be obtained elsewhere with more recent knowledge of recovery methods. It is of interest that water flooding following up the use of air in three cases failed to extract more oil from the sand.

At the present time the chief objection advanced against the pressure process is the need for isolation or unit operation for most effective use, but decided progress is being made in effecting consolidations of properties. The principal difficulty to overcome in operation is the tendency for the pressure to follow the less productive of the sand, but marked progress has been made in overcoming this trouble.

The process is particularly attractive because of its low installation and development costs, which together are often as low as $50 an acre as against several thousand dollars for each of the other processes. For deeper and thicker sands, the cost may be much greater, but even then, it will be but a fraction of the costs for the other two processes, particularly as the cost will be reduced where gasoline plants can be used for pressure purposes. The process is least exacting as to practical and economic conditions, and therefore is most generally applicable. It can be applied early in the life of a pool and merged into natural recovery with added profit to both. It can be applied with least disruption of present equipment, practices and customs. It is more flexible in use, lends itself more readily to experimentation and finally leaves the property in condition to apply whatever improvements may be made in the future on this process or to the latter use of either mining or flooding, should experience show that additional and profitable recoveries can be obtained.

Comparative Value of Air and Gas

As between the use of air or gas as the pressure medium, experience in the Eastern Fields, where the process has been longest in use, fails to disclose any objections to air so serious as to warrant paying a high price for gas or for withholding gas from a high market. Where gas can be obtained cheaply, it is desirable to use it, but in most old fields, gas is not cheap. The air, as it passes through the rock, picks up gas and gasoline vapors, and this mixture under proper safeguards, can be returned to the rock, and in this way, the pressure medium can be kept more than half gas and gasoline vapors for many years. As stated by Mr. Henry L. Doherty, gas is more soluble in oil than air, and it is also more effective in reducing the hold of the oil to the sand, but such advantage as may be gained in this manner may be lost in whole or in part by the greater solubility of the gas, making it a less effective expelling agent. Laboratory experiments on a gas some four times as soluble as air showed that it would force out hardly one-fourth as much oil as air, volume for volume. The more soluble gas tends to pass through the oil in a state of solution rather than forcing the oil ahead. The effect may be compared to the action of a piston in a cylinder when holes had been drilled through the piston head.

However, I do not regard the evidence as conclusive and a study of this question under varying conditions should be made. If further evidence is confirmatory, it will mean that several times as much energy must be expended in the compression of gas to obtain as much results as from the use of air. But there are some incidental advantages to the use of gas that also warrant consideration.

The German Mining Method

The mining methods at both Pechelbronn and Wietz has resulted in higher recoveries than any gained so far by either water or air pressure in this country. Though there is good reason to believe equally high recoveries might be obtained in many fields in this country, it is doubtful whether the process would be as successful in our fields where the sands are flat lying and laminated and otherwise unsuited for effective drainage. Hazards of life and property would be greater here, and though they could be minimized by changes in practices, there would yet be many fields where the process is likely to be impractical. Labor conditions are less suited in this country and mining would be a radical departure from familiar methods and would involve almost complete replacement of the present production departments of the companies. Mining must be conducted on a large scale and will involve consolidation of properties.

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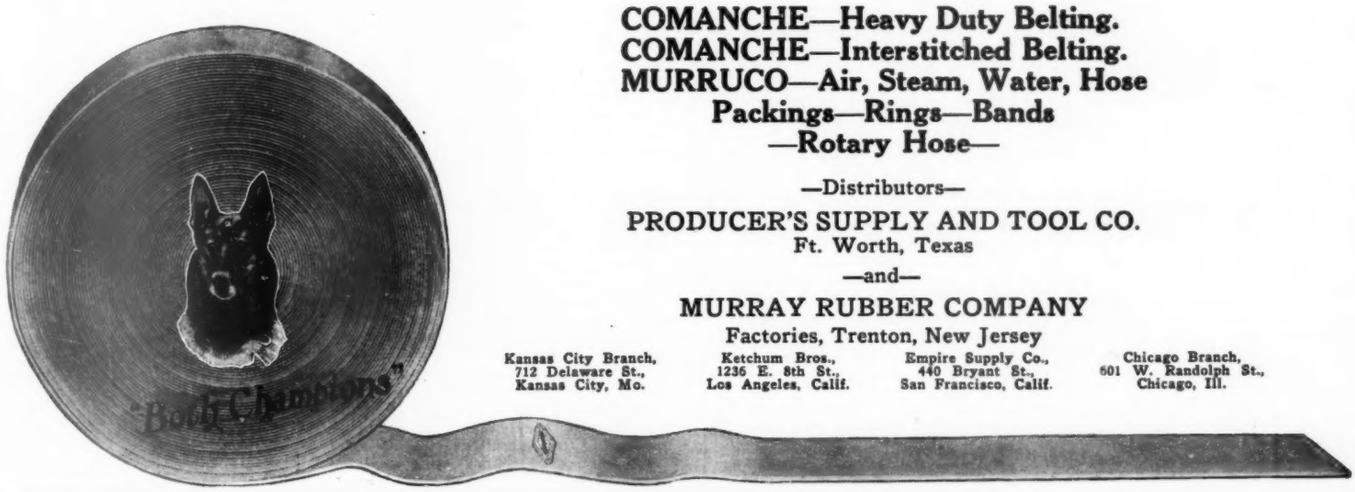

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Water Flooding Process

Flooding has been conducted for the past 35 years in the Bradford Field in Pennsylvania and New York. Water is let down certain wells and makes its way through the sand forcing oil ahead of it. Ordinarily the natural water head is used and no machinery is required, but the process is probably the most costly of the three as it has been found necessary to drill many new wells, best practice demanding two on each acre of land, whereas one well to each four to 10 acres was formerly the custom for natural production. When the water advances to a producing well it is converted into a water intake well and a new producing well is then drilled a short distance ahead.

Flooding is being conducted extensively only in the Bradford district, but small natural and induced floods are going on in numerous places and there are many records of such floods in the past. At Bradford, flooding has been commercially successful in the majority of cases in that profits have been made in spite of the high development costs. J. E. Umpleby states that careful estimates show an average original oil content of about 30,000 bbls. an acre, of which 3,000 bbls. has been recovered by wells in the past and an additional 6,000 bbls. by flooding.

The most objectionable features to flooding at Bradford are the excessive development cost of drilling new wells which amounts to $3,000 to $6,000 an acre, and the fact that it leaves the sand flooded with water, which may possibly prohibit the recovery by improved processes of the remaining 60 per cent of the oil that is not recovered by the water. Should the soda-ash method be fully successful, these objections may be overcome, but at the present outlook, air pressure promises to give just as much profit even though only half as much oil were recovered. It is as yet unknown what recoveries will be obtained by air at Bradford, but in any event, air can be followed up by water flooding or any other process.

In most fields, the water advances too unevenly to permit high recoveries; in many fields, clear, suitable water is not obtainable; and in most fields, the value of the oil at present prices would not repay the drilling costs. If the Bradford Field were transferred to Oklahoma, flooding would not be profitable today.

Combination Processes

Many combinations and modifications of these three processes have been proposed. Ranney advocates a modification of the German mining method in which air pressure instead of gravity is mostly relied upon to bring the oil into the galleries. Air has also been used by the French in the galleries at Pechelbronn, I understand, unsatisfactorily. Flooding from galleries has been proposed by John L. Rich for Bradford. My firm has and does use water to supplement the use of air or gas pressure, and at Bradford, tests are being made to supplement water flooding by air pressure. Heat has been proposed for all three methods, but, in my opinion, it is of doubtful commercial value.

I would not be so bold as to hazard what the limit of commercial recovery will be. Almost without exception, the genius of our people has scored larger triumphs in every line of endeavor than had been prophesied.

Comparison of the Three Processes

Of the three processes, the German mining method, as applied at Pechelbronn, has given highest recovery, water flooding at Bradford next highest, and air pressure in Ohio, third. But it would be a mistake to draw general conclusions from this inadequate data, for only by testing the processes commercially, under identical conditions in many places, can a worthwhile comparison be made. For example, water flooding has failed in a number of places where air has been entirely successful, and in several instances, water has failed to displace more oil from aired sands. Furthermore, no air property of my firm is yet abandoned, and no conclusions can yet be drawn as to ultimate recovery from most of the properites under air. How successful mining might be at Bradford, or in fields where air has been used, can not be said, nor is it known how successful air and flooding might be at Pechelbronn. It is of some significance that air pressure gave the highest ultimate recovery under laboratory conditions.

But choice of the three processes will not rest upon relative oil recovery alone, for the final test will be the comparative profits. Both mining and flooding cost several thousands of dollars more an acre than does the pressure process, and these processes must therefore recover enough more oil to extend the additional cost. In this the pressure process has a decided advantage. On one property, at Bradford, flooding would have to recover three times as much oil as the pressure process to make equal profits. Both flooding and mining require high initial investment, and returns do not begin for many months. Because of the greater costs and of the other disadvantages mentioned, namely hazards of life and property and unfamiliar methods in mining, and the hazard of destroying property values with flooding, I believe the industry generally will come to the conclusion to use pressure first, and to let the future determine what to do next.

Consolidating Old Pools

How much oil will be recovered will depend largely upon whether the fields are to be operated as units. This applies particularly to the restoration of pressure method, though in both mining and flooding, there are big advantages in large blocks. The consolidation of pools may seem visionary, but a start has already been made in the old fields of Oklahoma, where a number of pools have been consolidated either by purchase or by agreement among the property holders. The experience of oil men who have gone ahead on small properties is disclosing to them the desirability of consolidation when air or gas pressure is applied. I estimate that on a 160-acre tract located in a large pool, the independent operator will be forunate if he gets half as much profit as could be obtained from the same property in unit operation.

When pressure is applied to a small property, it does not stop at the boundary, but goes across, carrying oil with it. To prevent this, vacuum may be used and the pressure kept down, but this entails unnecessary expense and a lower production than would otherwise be possible. Often the conditions are such that independent operation is out of the question. The air or gas will pass through an open channel to the neighboring property and unless his wells can be controlled, the waste of pressure makes operation prohibitive. Many leases of 10, 20 and 40 acres are hopelessly small for independent operation.

Essentials in Plan

We find the essentials are: First, that the operators be convinced of the gains to be made by unit operations; second, that they have confidence in the technical ability and experience of the management of the new consolidations; third, that a reasonably equitable and simple way of appraising properties be applied. Once confidence had been established in the principle of consolidation and in the management, it was found comparatively easy to appraise the properties upon their relative productions, as the relative values of the properties were fairly well known and all realized that exact valuations were impossible, and so there was a give-and-take attitude on minor differences, particularly as they realized that without increased recovery, the properties would be valueless.

So far, four methods of consolidation have been employed in the old fields of Oklahoma, as follows:

1. One interest buys up all properties.

2. Undivided interests are assigned between the various property owners upon an agreed valuation so that each property owner owns pro-rata an interest in every other lease, the pool being operated by agreement by one of the companies.

3. The properties are assigned to a trusteeship and operated in the common interest, the expenses and profits being distributed pro-rata upon an agreed appraisal of the properties.

4. The properties are exchanged for stock in a new corporation upon an agreed basis.

Other plans doubtless can be worked out that will incorporate the essentials of unit operation. The surrender of property rights is usually objected to at first and many other plans for cooperation have been proposed, but none satisfactorily solve the problem. Never, to my knowledge, has a cooperative agreement held together in any stage of oil field operations. The last cooperative understanding with friendly neighbors on the eastern properties of my associates was recently broken through actions of the men in the field, unknown to their respective companies until too late to remedy. Line fights, loss of production, waste of pressure, unneeded expense follow either attempted cooperative agreements or independent operations.

Economic Effect of Artificial Production

The knowledge that a huge oil reserve of unrecovered oil is being left underground introduces a new element into the economics of the oil industry. The rate at which it can be brought to the surface is largely within the control of the industry. The cost of recovering this dormant oil will not be as much as many have thought. This will be especially true if the pressure method can be applied in unit operations. This production will not be charged with the large costs of finding, acquiring, and developing oil in new pools, which is increasing year by year.

The rate at which oil from these reserves will be brought to market will be largely in response to our needs. It cannot become a large part of the total production for a number of years, though if the process is applied to new fields as well as to old ones, the effect on the yearly supply may be felt sooner. When this stimulated production becomes an important factor, it may have an important influence in stabilizing the oil situation, as it will help to allay apprehension as to future supplies, and the production can be accelerated or retarded at the will of the industry. In mining and flooding, the program can be hastened or retarded in accordance with the attractiveness of the market, and, with pressure used in unit operations, production can be curtailed during oversupply and the pool charged with pressure which can be released when the flushed up production is needed.

Artificial Pressure to New Pools

Heretofore artificial pressure has only been applied to old pools. The industry has waited until the patient was on his death bed before applying resuscitative measures. In fact, thousands of producing wells have been abandoned that could have been made to produce great quantities of oil by modern practices.

But there is no reason to wait until the patient is in such desperate plight. So soon as the natural pressure declines sufficiently, artificial pressure can be applied to keep up production. This will not only increase the total recovery but increase profits to an even greater degree. I believe the future trend will be to merge natural pressure and artificial pressure into one program. This will involve unit operation, or at least operation in blocks of considerable size. I believe that in the next few years, the oil industry will become so convinced of the advantages of unit operation that they themselves will find a means of effecting it. It is pertinent to say that we are opposed to plans that have been proposed for forcing consolidation by governmental pressure.

Unit Operation Under Natural Pressure

With the greater knowledge that has been gained more recently as to the principles of utilizing natural pressures, the advantages become more apparent.

The advantages claimed for unit operation for natural recovery are:

1. A saving can be made in the development and operating costs.

2. There will be less danger of damaging the field by defective wells.

3. Development can be better gauged to fit market demands and to effect most efficient oil recovery.

4. There will be less waste of oil and more gas and gasoline marketed.

5. By regulating pressures recovery of oil and gas will be greater and the wells will flow longer.

The advantages of such unit operation are very real and important in the usual type of oil pool, but the need is most striking where a body of free gas occupies the upper parts of the oil sands. Typical of such pools are Cushing, Teapot Dome, and Cromwell. In Cushing and Cromwell the fields were split up into many small leases, and the wells drilled into the gassy parts of the pool let off the free gas, reducing the pressure there and allowing the oil to be forced into this part of the sand and to be largely dissipated. At Cromwell the effect on adjacent wells by this blowing off of gas was very marked and caused an abrupt decline in oil production.

That oil will be drawn up into the gassy part of the sand is within the observations of every oil man who has seen a gas well permitted to blow until it turned to oil. The oil drawn from the oil bearing part of the sand was the recoverable portion, but most of it becomes the unrecoverable portion as soon as it is taken up by the dry pores of the gas sand.

Precise estimates of loss of possible production at Cromwell cannot be made, but the following figures are based upon sound principles and for illustrative purposes approach near enough to the truth. I estimate that perhaps one-third of the normally recoverable oil was dissipated into the gas sands at Cromwell by the method of development, but, if instead, the gas had been held in, it would have acted as an additional expellent for the surrounding oil bearing parts of the sand and would have increased the normal recovery by perhaps one-third.

One policy, therefore, causes a loss, whereas the other causes a gain over normal recovery, and the combined effect as estimated for Cromwell would be to double recovery by following the latter policy instead of the former. As the oil recovered at Cromwell paid but small profits over the development and operating costs, this additional recovery would have increased the net profits far more than the increase in actual oil effected. Fewer wells need have been drilled, and more gas could have been marketed, and from it, more gasoline recovered.

In such a pool it will be necessary to refill the gassy part of the sand when artificial pressure is applied, and unless the pool is operated as a unit, no one can use the air or gas pressure method.

Artificial Pressure in New Pools

These gains from unit operation under natural pressure would make possible further gains under artificial pressure along a program that my associate, Mr. Dunn, and myself have long envisioned. The pool could be drilled up from one or two centers, location by location, on the spacing and development program best adapted to the local conditions and times. Gasoline compression plants, larger than are now justified, could be installed early in the life of the pool. As soon as the natural pressure in the parts of the pool first developed had declined sufficiently, residue gas from the gasoline plant could be forced back into the sand, the gasoline plant thenceforward becoming a combined gasoline and pressure plant. The gas in its passage through the rock picks up gasoline vapors which can be extracted during the next cycle through the gasoline pressure plant. Dur-

(Continued on Page 232)

Note method of application of NO-OX-ID "A" SPECIAL. Canvas wiper, brush and bucket only utensils required. Water and moisture not a hindrance, when NO-OX-ID is applied by this method.

NO-OX-ID
IRON=RUST
TRADE MARK

The Original Rust Preventive

With *NO-OX-ID* you are assured

1st. Effective and indefinitely long-lived protection.
2nd. Ease of application.
3rd. Moderate cost, in that we keep far below the attendant costs of the application of cheap paints, tar products, cements and asphaltic materials—their costs averaging from 4% to 7% of the cost of pipe line installation, while we keep well below 3%, with the added advantage of the indefinitely longer protection.

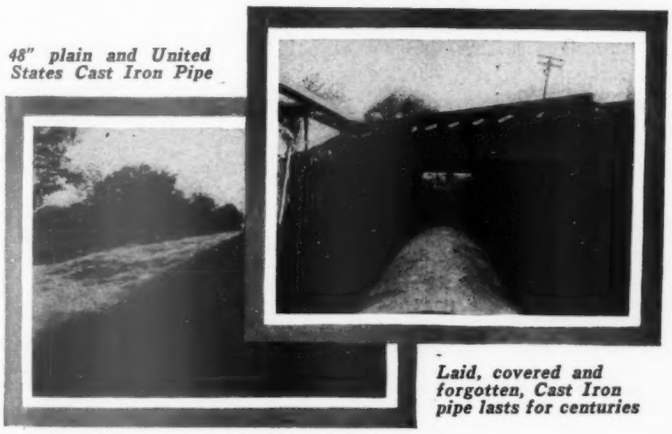
NO-OX-ID Rust Preventive is chemically able to withstand the extremely severe conditions to which underground pipe line is subjected. Its proven merits as a superior Rust Preventive are evidenced by the adoption of its use by the major oil companies of the country.

NO-OX-ID stops old pitting and prevents new pits from forming. Do not allow rust to reduce the efficiency of your equipment and make maintenance a costly item. We want to tell you more about NO-OX-ID.

Dearborn Chemical Co.

310 S. Michigan Ave., Chicago 229 Broadway, New York

48" plain and United States Cast Iron Pipe



Laid, covered and forgotten, Cast Iron pipe lasts for centuries

The world's longest gas main

22 miles of United States Cast Iron Pipe for Chicago and suburbs

FROM north side to south, under the river, in deep fills and over bridges, this great pipe line assures Chicago of a sufficient gas supply for years to come.

Write to us for a copy of the latest A. G. A. specifications

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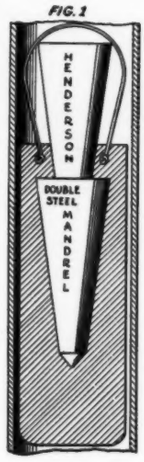
NEW YORK KANSAS CITY
BUFFALO CLEVELAND
MINNEAPOLIS

HENDERSON-DOUBLE-STEEL-MANDREL LEAD-PLUG

Patent Applied For

FIG. 1



Something new and superior to any plug on the market, in that the double mandrel will expand the lead body for its entire length, while a single cone mandrel type will expand the lead body only at the top. A little study of the cut which shows before and after will convince the practical producer of the advantage of the double mandrel.

FIG. 2

Manufactured by

The McJunkin Supply Company

Charleston, W. Va.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

LIBERTY COUNTY, Texas; 75 acres for lease in southwest part of Hull Field, part of which is one-third of mile from production. Will only lease to a company amply able to drill 4,000 feet.
GERALD H. HUGHES
Box 27 South Orange, N. J.

800 ACRES solid block, Woods County, Oklahoma. Fully surveyed by nationally known geologist. Rentals paid to 1927. Direct trend of new Kingman County, Kansas bear cat. Want a well. Showings in shallow wells all sides near by.
J. P. Thurman, Owner
Wichita, Kans.

200 FEET offset to E. J. Miley in San Juan, New Mexico field. Other close-in small blocks, large tract for drilling proposition. Wire or write Box 3, Farmington, N. Mex.

SHALLOW drilling block, also close-up acreage. Good geology. Frank Poorman, 420 Fidelity Union Bldg., Dallas, Tex.

FOR DRILLING contracts, some three to seven-acre tracts of proven acreage in the Davenport Field. For particulars, address Box 306, Davenport, Okla.

DUVAL COUNTY, TEXAS
For lease, 6,760 acres on escarpment, surrounded by 300,000 acres major companies leases. Two deep tests now drilling close by. Geology right. Next big strike. Want one-eighth oil and gas and cash bonus. Quick action necessary to secure. Write or wire John D. Lamb, Payne, Ohio.

FOR SALE—Panhandle oil leases and royalties. Texas Co. now drilling this acreage. E. Cooper, Amarillo Hotel, Amarillo, Tex.

NEW MEXICO
Leases and drilling permits.
E. T. BUCKLEY
403 Sunshine Bldg.
Albuquerque, N. Mex.

10,000 ACRES leases Calhoun County, Miss., for well. No rent one year, 25 cents acre after. Good geology. Mawk & Co., 282 South Front. Memphis, Tenn.

WE SPECIALIZE in oil leases in Culberson County, Texas. Have desirable acreage in the Permian formation on structure.
H. O. THRALLS
Tri-State Leasing Co.
210 Two Republics Bldg., El Paso, Tex.

DEEP TEST WELL NOW DRILLING IN NORTH FLORIDA
T. F. Bray and associates from Arkansas are now drilling a deep test well for oil and gas located on the Monticello Dome in Jefferson County, Florida. Send for structural and drainage map; also geological report.
Geology by Dr. S. T. Wisby of Little Rock, Ark. We desire to hear from all of those who are interested in purchasing leases and royalties around this well.
T. F. BRAY, TRUSTEE
Box 127 Monticello, Fla.

NEW OIL DEVELOPMENT in Texas County, Oklahoma. Three wells drilling, two more derricks up, big excitement, oil leases and royalties for sale. If interested send for prices and oil map. Ranches for sale. Guymon Land & Loan Co., Guymon, Okla.

NEW MEXICO — 26,000 acres San Juan and Rio Arriba Counties, Government perits. Want drilling in contracts with reliable companies. Percentage basis. Good terms. Shallow drilling. Oil 66 Baume, 84 per cent gasoline. Proven structure. Four sands. Approved by high-class geologists. Write us for particulars. International Development Co., 1006 Patterson Bldg., Denver, Colo.

FOR SALE—Oil leases and royalties. Write us. Kevin-Sunburst Holding Corp., Box 348, Shelby, Mont.

WEST TEXAS Marathon Fold oil leases. Personal investments since 1919. Write for data and maps. Paul Konz, P. O. Box 291, Fort Worth, Tex.

LEASES—PRODUCTION

WORLD'S GREATEST OIL BOOM
Northwestern New Mexico
Scene of Action
Greatest oil companies in the world are acquiring acreage, and unprecedented drilling is outlined for the early spring.
Have you gotten your land in this wonderful section? If not, get in touch with us at once. Don't wait, but act at once.
We deal in State land and Government permits.
HARTMAN & COMPANY
Suite 222, Patterson Bldg., Denver, Colo.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
816 Colcord Bldg., Oklahoma City, Okla.

FOR SALE — Leases, production and partly developed leases. On account of shallow drilling, low cost of equipping, small operating cost, high gravity oil and long life production, Kentucky offers the best opportunity for the small investor. We have for sale producing properties with 2 to 100 bbls. daily production and large undeveloped acreage with proven locations to drill. Address W. P. Harley, Bowling Green, Ky.

FOR SALE OR LEASE—360 acres in Caddo Parish, 13-16-19. Must sell; price right. Mrs. Sue Pearce, 716 Louisiana street, Shreveport, La.

FOR LEASE oil and gas acreage, located in 16-17-19 and 20-12-11, Okfuskee County, Okla. Herman Sions, Moorefield, W. Va.

PRODUCTION—243 acres in Gibson County, 6 miles east of Princeton, Ind., on improved state highway. Two leases, no rentals. Leased on one-eighth royalty, six wells on pump, 1,420 feet deep. Two years old, producing about 25 bbls. per day. Wells make some water. Oil sells $2.12 per barrel. Thousand-barrel storage tanks connected with Illinois Pipe Line. 25-horsepower Fairbanks-Morse crude oil engine, Mascot power, boiler for steaming oil. One string of 10-inch and 8-inch drilling casing. All equipment in best of condition. Drilling well cost $2 per foot on contract. Six proven locations on lease with possibly more. Will sell everything for $1,500 per barrel on a 10-day test. If you want a first-class property and are willing to pay the price come look this over. This is about all the information I have that I can give you, and if you mean business verify this by personal inspection. H. A. Mann, 314 Parrett St., Evansville, Indiana.

WOULD like to hear from parties wishing to invest in Oklahoma. Wildcat leases and royalties. W. H. Adams & Co., 203 Clinton Bldg., Tulsa, Okla.

FOR SALE—Desirable oil leases in established Kentucky Field, shallow drilling, good market. Prices reasonable; references. Write F. J. G., Box 402, Glasgow, Ky.

I HAVE around 925 acres under lease in Clay County, West Virginia, Big Injun sand, proven territory. Will consider proposition for drilling on half or reasonable development for any part of all. E. R. Reed, P. O. Box 204, Clay, W. Va.

YOU have your organization and can give good service. Does the Billion Dollar Petroleum Industry know it? Have you made it easy for oil men to order from you? If not, the surest and best way to promote the merits of your company is to use The Oil and Gas Journal—the oldest and best petroleum publication in the world.

LEASES—PRODUCTION

OIL AND GAS LEASES
Marathon Fold—West Texas
30,000 acres Crockett County, large and small blocks; adjoining big companies; scattered wildcat. Also close-in adjoining World well block.
20,000 acres 10-year leases; low rentals; Terrell County, getting good play. Watch this county! Prices right.
Upton County. Scattered tracts.
60,000 acres one block, southeast Pecos County, on geological formation. Most attractive as to desirability, price and terms.
5,000 acres in Irion County. Ten-year lease; watch the new work here.
7,000 acres Loving County. Ten-year lease; 10-cent rental. Right in line.
Write for prices and maps. Will allow time for geological inspection.
C. W. WEBSTER
W. T. Waggoner Bldg. Ft. Worth, Tex.
Reference: Mercantile Agencies

F. P. BOWEN
Tonkawa, Oklahoma
Dealer in producing and non-producing royalties, settled or flush production.

DRILLING BLOCKS and production in western Kentucky. R. E. Cope, Box 489, Bowling Green, Ky.

ADVERTISING RATES

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Compute white space at the above rates

Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

FOR SALE or lease, 80 acres, tested on all sides. Bartlesville sand. Other acreage. John McQuiston, Independence, Kan.

WILL LEASE 77 acres nothwestern Guernsey County, Ohio. Only available acreage, 3 miles production, must drill within 4 months. Write J. G. Sager, 705 North High St., Columbus, Ohio.

FOR SALE OR TRADE—Five wells pumping five barrels. 40-acre lease 3 miles west Bartlesville. Needs shot, looks good, no dry hole, in oil pool. Leidecker machine, Jones underreamer, 6-horse engine. Some casing and tubing. Lock Box 599, Independence, Kansas.

FOR SALE—Leases in the Panhandle oil fields. W. R. McDaniel, 2105 Sixth Ave., Ft. Worth, Texas.

1,000 ACRES of oil land at Guston, Mead County, Kentucky, offsetting two wells of high grade oil, 550 feet deep with the best of a report. Drill on the ground that can be bought for $1,000. Offer wanted. Box B-165, The Oil and Gas Journal, Tulsa, Okla.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

CAN MAKE attractive offer exchanging acreage for drilling test well on several thousand acres located Henderson, Smith and Van Zant Counties, Texas, near Chandler. All on structure and passed on by noted geologist. Address, Fidelity Petroleum, Inc., Delphos, Ohio.

HAVE BUYERS for flush or settled production in Oklahoma and North Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

ROYALTIES—PRODUCTION

PRODUCING
OIL ROYALTIES
Kansas, Oklahoma, Texas, Louisiana and Arkansas
BOUGHT and SOLD
Inquiries Invited
J. G. REAVES & CO.
Royalty Dealers Exclusively
St. Anthony Hotel
San Antonio, Texas

FOR SALE—Royalty surrounding Wilcox test to be drilled on Tonkawa-Billings line of folding. Address, Box 1483, Tonkawa, Okla.

WE BUY AND SELL
Producing royalties and royalties on drilling structures. Write us your requirements. Edwin F. Hyland & Co., 923 Kennedy Bldg., Tulsa, Okla.

J. F. MARION COMPANY
Magnolia Building
Dallas, Texas
Buys and Sells
Texas Royalties
"Ask Us First"

KAY COUNTY ROYALTY CO.
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Tonkawa, Oklahoma
Dealers in northern
Oklahoma royalties.
Write us regarding your wants.

FOR SALE—REFINERIES

REFINERY — Located Alexandria, La., connecting six railroads. Built of new materials; potential crude supply unlimited; new Urania Field only 40 miles; 11-cent rate on crude from El Dorado-Smackover. Entire output easily marketed nearby. Plant capacity 600 bbls. Improved, simple cracking process makes lub stock instead coke residue. Very attractive proposition to responsible parties. Address P. O. Box 1942, El Dorado, Ark.

REFINERY FOR SALE AT A BARGAIN
All or part of a 500-bbl.-a-day plant. One 150-bbl., one 350-bbl. agitator, one 350-bbl. still, one Ingersoll-Rand air compressor class FRI steam 7x6 air 8x6, one 6'x10'x24' condenser box, four 100-gal. blow cases, one 6,000-gal. horizontal acid tank, one 5-bbl., one 30-bbl. mixing tank, one 1,200-bbl. steel riveted, six 320-bbl. steel riveted, three 500-bbl. bolted, ten 250-bbl. steel bolted tanks, two 100 h.p. Nagle stationary boilers. All sizes in pipe and fittings, 4", 3", 2" pipe line and some producing properties. One Cyclone tractor gasoline drilling machine.
THE TRACY SUPPLY CO.
Bowling Green, Ky.

EQUIPMENT WANTED

WE ARE at all times in the market for all sizes line pipe and casing. See us before you sell, and make money.
IMPERIAL PIPE & THREADING CO.
P. O. Box 1231 Wichita Falls, Tex.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FILTER EQUIPMENT FOR SALE
All or part of complete filter equipment consisting of five 3-ton and six 2-ton capacity filters. Mounted on separate steel frame. Five steel earth cars, two steel charging cars on track. Also one new Century earth burner. All in good condition, very low price. Address, The Superoil Company, Toledo, Ohio.

JARECKI pipe machine in A-1 condition. Cuts from 2½-inch to 12½-inch. We have 50 sets of dies to go with machine. Will gladly demonstrate.
IMPERIAL PIPE & THREADING CO.
P. O. Box 1231 Wichita Falls, Tex.

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

OIL DRILLER having complete rotary deep well rig, for 8-inch self-sharpening, unbreakable bit, for hard and soft rock. G. Griesche, 2024 Durant Ave., Berkeley, Cal.

FOR SALE
One Fairbanks-Morse, 2-cylinder, 100 horse power, Type Y special electric direct connected oil engine, complete, in excellent operating condition.
FRANTZ MFG. CO.
Sterling, Ill.

CASING AND LINE PIPE
For Sale
Let us figure with you.
ELLIOTT MACHINE & SUPPLY CO.
Depew, Okla.

POSITION WANTED

EXPERIENCED OIL MAN wants job as production man or lease man; over 15 years' experience; can give good references. Address Box 238, Gorman, Texas.

WANTED—Position as refinery superintendent; 15 years' experience construction and operating of refineries in North Texas and Oklahoma. A-1 references. Box B-154, The Oil and Gas Journal, Tulsa, Okla.

TO LEASE or to act as representative for oil company or individual. Seven years oil field experience, three and one-half in a position of trust, leasing, contracting for drilling, equipping, operating and buying and selling small properties. Early oil country experience under father, one of the pioneer producers. Moderate salary to start or expenses with royalty interest. Box B-153, The Oil and Gas Journal, 30 Church St., New York, N. Y.

REFINER—Twenty-three years varied and active service as manufacturing chemist, superintendent and manager. Now open. Age 39. Box B-111, The Oil and Gas Journal, Tulsa, Okla.

I OUGHT to be able to sell equipment through this section. It must bring good results, because it is filled with Classified Advertisements every week. Guess I'll try it.

HELP WANTED

WANTED—Pipe line field superintendent; one thoroughly versed in all phases of oil pipe line work. State age, experience, references and salary wanted first letter. No booze fighters. Box B-160, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Young graduate petroleum engineer or mining engineer with geological training who has had considerable drilling experience or who has handled production and general petroleum engineering problems. Box B-161, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE, ENGINEERS, $3,000-$25,000, find our individual, confidential service effective in making new connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Jacob Penn, Incorporated. 305 Broadway, New York City, N. Y.

ADDRESSES WANTED

ANYONE knowing the whereabouts of my son, Charlie Hartung will confer a very great favor by notifying Ed Hartung, 207 Pine St., Carrollton, Mo.

WANTED

"OIL LAND to develop in south California." D. W. Ward, Fulton, Illinois.

WANTED—Complete planetable. Box 355, Columbus, Miss.

WHAT HAVE YOU to offer in producing royalties that can be bought right. P. O. Box 1362, Tulsa, Okla.

LEASES WANTED—In Township 21 south, Range 33 east, Lea County, New Mexico, only. Near Covert well. Submit legal description and best cash price. H. & H. Lease Co., Box 851, Albuquerque, N. Mex.

WANTED—Financier to raise funds to drill 500 more or less, shallow oil wells; very attractive proposition. P. O. Box 248, Cisco, Tex.

WANT producing royalties and settled production Oklahoma. Give full particulars first letter. Also consider drilling blocks good geology. No brokers. Write P. O. Box 1382, Oklahoma City, Okla.

WANTED blocks and leases on good geology in any part of Texas. Mail maps and geology. Box 539, Tulsa, Okla.

WANTED to buy producing royalties in any field. E. R. Sitton, 223 Boyle Bldg., Little Rock, Ark.

WANTED—Block of acreage supported by good geology to drill for interest. Prefer Payne, Pawnee or Creek County. Also want 5 to 25 bbls. settled production. Give full details in first letter. F. A. Best, 206 Robinson Bldg., Tulsa, Okla.

WANTED—Producing royalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

WANTED DRILLING PROPOSITIONS
Will drill test well on well located acreage with good geology. Submit with full particulars to Steiner Oil Co., 347 Harvey Snider Bldg., Wichita Falls, Tex.

ORCHARD AND FARM LANDS

MUST SELL 5,000 ACRES
CHOICE RANCH
Water on ranch contro's around 50,000 acres. Have fine American experienced goat raiser, with family, familiar with this ranch who will do work on shares. Best goat region in Texas. Water and grass. Land has great future possibilities in minerals but owner can't hold it, and can't finance goat proposition. Must raise $12,000 immediately. Mohair from 2,500 goats would most conservatively clear you from $3,000 to $6,000 per year and be dependable. Great game country. Across river from William Randolph Heart's ranch. Not leased for oil and gas. P. O. Box 725, Dal'as, Tex.

30,000 ACRES cutover lands in the heart of Ozarks, suitable for farming, fruit growing and dairying, priced to sell. Arkansas Land Co., Leslie, Ark.

200-ACRE improved farm; 50 acres in cultivation; 15 acres in commercial apple orchard; 4-room house, 2 large barns, other outbuildings; well watered; 2 miles railroad station; price $1,500. Arkansas Land Co., Leslie, Ark.

BUSINESS OPPORTUNITY

IF PRODUCTIONS from your oil wells have become too small to yield expected profits remember that you have recovered only about 30 per cent and that 70 per cent of the oil is still in your property unrecoverable by pumping. You can recover this oil by installing the "Lund" oil mining method—a system in successful operation in Europe and soon will be in this country. Recovery cost less than oil well drilling, quantity considered. Preliminary information free for the asking but enclose $5 to help pay for drawing showing surface plant required and underground workings and equipment for 5,000-bbl. daily production. Conditions being favorable your property may be made to yield big. P. H. Lund, Petroleum Engineer and Geologist, 734 Palace Bldg., Minneapolis, Minnesota.

BUSINESS OPPORTUNITY

BROKERS—SALESMEN
A sound seasoned royalty company paying monthly cash dividends offers hustlers an opportunity for big money. Company going on six years old and has paid over 115 per cent in cash dividends. Splendid cooperation, many repeats. For particulars write E. F. Hyland, 923 Kennedy Bldg., Tulsa, Okla.

CASINGHEAD GASOLINE by-product of interest to owner of plant (over 1,000 gallons per day) located in Kentucky or Louisiana. Box B-163, The Oil and Gas Journal, Tulsa, Okla.

WILL GIVE one-half interest in 80 acre lease, eight wells and equipment for drilling Turkey Mountain sand test. Section 33-19-12. Box B-162, The Oil and Gas Journal, Tulsa, Okla.

AN INDIVIDUAL with $500 or more may invest and become affiliated with practical men in new oil company, having very valuable foundation and assets; investigate; it will pay. Call or write 217 Central National Bank Bldg., Tulsa, Okla.

NAMES; addressing; cuts. Art photos four for $1.00. Ben Meyer, 35 West 31st St., New York, N. Y.

WILL EXCHANGE good Kansas City, Mo., revenue property worth $50,000 for good shallow production or royalty of equal value. J. O. Monnig, Palestine, Tex.

LATEST OIL AND MINING NEWS
Free oil lease club certificates with your subscription. Sample copies and details free. Mining and Financial Record, 36th publication year. 1831 Champa St., Denver, Colo.

WILL GIVE 15,000 acres for a well; Arkansas territory; gas showing; geological report. Address G. Lucas, 617 Edwards St., Shreveport, La.

WILDCATTERS, ATTENTION
Will exchange 8,000 acres oil leases on first class geological structure in Polk County, Wisconsin, for 2,500-foot test well. George Laskowske, Turtle Lake, Wis.

PRODUCTION WANTED
Must be worth $250,000 or more. I will consider to give my retail business, located in large city, worth over $250,000 in exchange. My business netted last year over $50,000. Box B-152, The Oil and Gas Journal, Tulsa, Okla.

ARKANSAS WELL LOG COMPANY
214 P. O. Bldg., El Dorado, Ark.

FAR EAST Purchasing Service. Will do your buying of anything desired in any line; native art, batik work, brass antiques, embroideries, laces, etc. Inquiries answered, references furnished. Address, Les Modes, 213 Orchard Road, Singapore, Straits Settlements.

IT'S WORTH TRYING
During the year thousands of men use the Classified Wants Section to good advantage.
They use it to buy or sell leases, royalties, production, equipment or service of all kinds.
You can do the same thing.
Mail your advertisement now and it will be placed in next week's issue where more than 20,000 readers will have an opportunity to bid on your offering.

RAISE CAPITAL
Through the sale of securities in your corporation. Twenty-five years' experience behind plan.
NORTHCLIFFE CORPORATION
25 West 43rd St., New York, N. Y.

ARE YOU REPRESENTED IN NEW YORK
Experienced selling agent (drilling, refining, marketing supplies) offers you worthwhile representation. Tools, specialties, chemicals, etc., for domestic and export trade. Commission basis only. Sales, 1508 St. James Building, New York, N. Y.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 35 E. Tenth, Oklahoma City, Okla.

DOGS—POULTRY

POLICE PUPPIES 6 months, husky farm raised; good pedigree, line bred, best blood lines; prices reasonable. E. L. Hudson, R. R. No. 5, Independence, Mo.

PEAFOWL pheasants, bantams, pigeons, wild geese, ducks, breeding stock, hatching eggs, free circular. John Hass, Bettendorf, Ia.

POLICE PUPPIES—Famous Tell and Boll blood with Starkenburg strain, by imported sire. Females $75; one male $125.
H. D. STRONG
Stroud, Okla.

BEAUTIFUL registered bull pups $15. Bulldogs, 501 Rockwood, Dallas, Tex.

PATENTS

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

LETTERHEADS—PRINTING

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We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First class material and workmanship.
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Oil City, Pa.

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olde Press, 215 East Third St., Tulsa, Okla.

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CHICAGO GASOLINE MARKET SOFT AS JOBBERS DELAY PLACING ORDERS

By J. B. Waldo

CHICAGO, Feb. 13.—While the large companies of the Standard group have been advancing their tank wagon prices in practically all parts except California, a number of refiners have been dropping their prices so that in spite of the higher rates at which gasoline and kerosene are to be distributed, the Chicago market has had some pretty soft spots. These lower prices have been brought about by refiners trying to sell gasoline when there was little demand.

The jobbing trade apparently has been taught a lesson not to buy for distribution several months in advance. There has seldom been any increase in sales to the public previous to the middle of March. It is unwise, in one jobber's opinion, to stock up now for a demand that will not come in this territory before the latter part of April at best. The integrated companies of course can use the tanks at their stations as storage for the refined output but the jobber might safely delay increasing his stocks until April 15, at least.

On this theory, it is not a bad thing to have a dull market now, much better than to have it as has been the case for several seasons, when the trade should be entering the period of greatest distribution. But there were refiners and marketers who expected that the rush demand had during the first month of the last three years would be repeated during January of 1926. There has been some accumulation of stocks of gasoline and this is evidenced by the efforts to dispose of these stocks. Early in the week there was a general offer made to sell Navy gasoline out of Shreveport at 10¼ cents, Group 3 basis, and at the close of the week refiners in northern Louisiana, in Group 3, and in North Texas were offering Navy gasoline to marketers in some cases for the remainder of the month at 10 cents and in at least two cases these prices were quoted to the jobbers direct. That any volume of gasoline was sold is doubted. Under present weather conditions low prices are not a real inducement to buy. About the only large sale reported was the purchase of 50 cars by the Benzolene Motor Fuel Co. (the Yellow Cab) which according to its buyer was for 50 cars of strictly U. S. Motors gasoline and was secured at "less than 10¼ cents." The trade report is the buyer paid 10 cents.

There is quite a lot of gasoline bought for February at 9¾ and 10 cents, previous to the crude advance and this gasoline with the purchases made direct has served the needs of the trade so there has been very little business going to the refiners this month. Jobbers have ordered very sparingly and even on contracts are not giving full shipping instructions, so it has proven impossible for the refiner to hold the full cent advance made when the tank wagon was advanced. There are some who predict a decline below 10 cents in the refinery markets but the best view, considering the action taken by the Eastern and Southern Standard Companies in advancing their tank wagon prices, is that the present market is at its low point and there is likely to be some rebound with a little better buying during the coming week. The demand for the higher tests has been no better than for the Navy grade and the prices have receded with other quotations. Natural gasoline has a little more than held its own being about a half cent higher than early in the week at which time quotations here were near the low point for the year.

Kerosene Strong

Kerosene is very strong in this market, the demand, though not large, being in excess of the visible supply. Refiners are running comparatively little. Some are unable to take orders, being sold ahead or needing the oil for their own distribution. Stocks of kerosene have been drawn on for the last six months. Refiners with distribution are trying to accumulate some kerosene and other refiners in that class are buyers of more or less oil as they can. Some weeks ago it was predicted the kerosene market would be on a 6-cent basis. The advance in the tank wagon price has aided and it looks as if next week would see it touch 7 cents. The local market is now practically 6⅞ cents with only a few selling at 6¾ cents.

Furnace Oils

Furnace oils have shown little change and no improvement. Distributors are more concerned to reduce stocks than to order additional supplies. Distributors are still buying some gas oil and occasional cars of distillate.

Gas oil is holding its recent strength, the one enviable position among the oils used for heating. It is fortunate in having a rather wider range of usefulness and the output is less than of fuel oils. Dealers state that it is hard to buy any good good gas oil at less than 3⅝ cents, Group 3 points. There have been reports of sizable orders by refiners taking it as cracking stock but the bulk of the business has been in small amounts.

There has been no appreciable improvement in the fuel oil situation and the opinion is that the best prices of the season have been had. There has been no real new buying.

The market is not substantially lower than a week ago, just shaded a little but the tendency is downward in prices and this makes the buyers hold off. Good refinery fuel oil, 18-20 or 18-22, was offered at $1.15 by refiners and this means that some sellers would split their nickle of profit and quote as low as $1.17½ although the regular market quotation is $1.20 to something a little higher, provided the business is not wanted very badly. The top price for a 24-26 would be $1.30 and few buyers now would pay that much. Smackover is steady, but no great strength is shown although a cargo sale of crude at 15 cents premium is reported.

Lubs Quiet

Lubricating oils are quiet so far as the immediate demand but a number of leading refiners here state they have a good amount of advance business and inquiries are fairly numerous. Prices are firm at the advanced list with refiners.

There has been no general change in tank wagon prices. The number of adjustments made has been small, being chiefly in South Dakota where most of the quotations have been advanced 2 cents at tank wagon and service stations. The consumption of gasoline in the Mid-Continent showed some increase during January over the corresponding month of last year.

There is no change in the local situation as to price conditions. It was hoped and rather expected that with the advance in the tank wagon would come the end of the 1-cent a gallon discount in dumps of 100 gallons or more but the Standard has not abolished this discount and the others wait on the Standard. So long as this continues, several of the distributors will continue to insist that the real tank wagon price is the rate for 100 gallons and base their service station price on this figure. In commenting on the quantity discount allowance, one distributor stated that so far as his business was concerned it made no difference in the smaller places but that in the larger towns it spoiled a 4-cent marginal contract." The Standard Oil management states that the report they intend to do away with the Q. D. A. is erroneous and that they are still making contracts that had a year to run. The advent of the Cities Service Oil Co. in Chicago is regarded as a good thing by local distributors.

MEXICO HAD 23,131,044 BARRELS LESS IN 1925

(Continued from Page 82)

River, Huasteca Petroleum Co. had the academic honors of drilling the deepest test for oil yet drilled in Mexico, getting a dry hole at 5,338 feet, no limestone. Just north of there it drilled another deep test, No. 2 La Laja, (declared completed in January 1926), the drill stopping in blue shale at 4,345 feet. No success attended the company's efforts in Tres Hermanos, and on the completion of three more failures in 1925, all deep tests, it has not resumed operations there.

The above sums wildcat operations in the South Fields.

Isthmus of Tehuantepec

In the Isthmus of Tehuantepec and State of Tabasco, no less than 20 tests were actually completed in 1925, of which 14 were rated as producers. Three completions belong to Tabasco and were failures. In fact, two more tests are shut down there now, which may also be declared failures, but as yet they are under consideration. These Tabasco tests belong to the south Mexico subsidiary of the Mexican Seaboard Oil Co.

Mexican Eagle Oil Co., in its old Isthmus holdings, has again been devoting considerable attention to increasing its production there. The result is that it scores 14 small pay completions and only three failures. At the end of 1924, its production there was around 150 bbls. a day and now is around 2,000 bbls. The fields there are quite similar to the salt dome formations of the Texas-Louisiana Gulf Coast country, and the wells have to be kept under considerable back pressure to keep them from sanding up. The oil is high gravity (28 degrees Baume, and better) and this makes it particularly valuable from a refining viewpoint. The production is handled at the Eagle's Minititlan refinery hard by.

Vessel Shipments

Reduced to a table vessel shipments from ports of primary clearance during 1925, follow:

From Tampico	98,254,029
Tuxpam	1,915,408
Port Lobos	691,602
Total 1925	100,861,039
Total 1924	132,793,390
Decrease 1925	31,932,351

The movement was divided as follows:

To United States (including insular possessions)	71,657,044
Cuba and other West Indies	8,309,887
To United Kingdom	2,642,917
Mexican Coastwise	3,907,832
South America	4,195,528
Canada	1,432,295
Panama	1,425,509
Continent	1,149,416
Central America	912,647
Azores	44,214
Mediterranean Ports	16,805
Bunkers (to balance)	5,166,945
Total	100,861,039

In this list the classes of oils were as follows: Crudes, 56,305,770; topped crudes, 33,927,777; distillates, 5,460,547, while the bunkering item of 5,166,945 is added to balance. The northern fields production is represented by 71,999,656 bbls.

In the shipments noted Cuba and West Indies are credited with more oil than they actually received. The last half of the year a good many vessels plainly destined for United Kingdom or the Continent were cleared for West Indian ports evidently for orders. This, in a small measure also applied to the United States (the port of Key West) for a short while.

Tank Car Movement

The tank car movement of fuel oil and refined products out of the Tampico district for interior domestic points of distribution showed a marked improvement. It totaled 10,166,682 bbls., an increase over the 1924 movement of 2,442,802 bbls.; and no doubt established a record for a movement of this kind. This movement was divided as to classes as follows: Fuel oil (crude and topped), 9,355,977 bbls.; other refined, 810,705 bbls. A great deal of case goods leaves the Tampico refineries for interior points also, but it is not possible to check this.

Oil in Storage

At the commencement of the new year (January 1, 1926) the volume of oils in steel storage was as follows: Heavy crude, 9,633,945 bbls.; light crude, 2,808,228 bbls.; topped crudes, 7,937,270 bbls.; other refined oils, 2,188,237 bbls.; total, 22,567,680 bbls. This is an increase of oil in steel storage over January 1, 1925, figures of 2,394,432 bbls.

In General

With the exception of a 43-kilometer 10-inch trunk pipe line, which contractors are completing for the National Lines from its Chapacao right of way production in the Ebano sector of the northern fields to the National's recently acquired terminal at Tampico, no new trunk line construction was undertaken in 1925. Some short laterals were laid in the northern fields, the most important of which was Huasteca Petroleum Co.'s extension from its main line station in Ebano to the Marland holdings in Hacienda Limon. No new pipe lines are contemplated, as existing lines are amply sufficient to care for everything in sight in existing fields.

In the south fields salvage work on lines leading to Port Lobos continued, although much of this work was done in 1924. Port Lobos saw its last cargo of oil cleared last August. Terminals and topping plants there are being more or less dismantled. None was in operation during the year. The port itself, entirely dependent on the oil industry, where loading was always done through sea loading lines, has been closed.

It might be remarked in closing that there is no definite wildcat program apparent for 1926 (as remarked in proven areas, or in juxtaposition thereto. Some wildcats well be drilled here and there, but there is no set program nor any definite announcement to that end at this time.

DEMANDS SEGREGATION OF THE INDUSTRY

(Continued from Page 82)

None of the conservation methods proposed to date sufficiently stress the effect the present organization of the industry has on the most economically justified use of oil products. All of them deal with some method to restrict the production of crude.

All the proposals for conservation that have been made up to date tend to increase the price of crude, with the ultimate purpose of restricting its use. Through the medium of increased price, they propose to force it into the channels of superior use. This method is certainly not American. If our petroleum resources are to be conserved and restricted to superior uses, do not let us attempt it through any medium that will drive its use into the luxury class where the "rich" can enjoy it while the "poor" look on.

I believe it is conceded throughout the industry that not even half of our present production of crude oil is required to supply our national petroleum demands for recognized superior uses, and that the products thrown into inferior uses contain at least 50 per cent of easily obtained gasoline and other superior derivatives.

As a first step I suggest the establishment of a uniform accounting system, and the segregation of each division under separate invested capital setups, with uniform accounting methods in each department, particularly where the operations are all by one great company.

I also suggest considering the idea of legislation in some form to restrict the consumption of petroleum products to superior uses, and I only make this suggestion as good public policy if it is decided that some form of system of conservation must be adopted.

OKLAHOMA FIELDS

(Contiued from Page 44)

dry and abandoned at 2,876 feet. W. B. Pine's No. 7 Doyle, NW cor. NE NW, Section 18-15-13, got sand at 2,702-11 feet, and made 150 bbls. in 24 hours, following a shot. Transcontinental Oil Co.'s No. 1 Beams, SW cor. NW, Section 3-15-14, is a 10,000,000-foot gasser

at 1,499-1,502 feet. Pulaski Oil Co.'s No. 1-A Adams, NW cor. Section 33-15-14, was dry and abandoned at 2,287 feet. Invaders Oil Corp. and Harris & Hays' No. 15 Miller, NW cor. NE SW, Section 16-14-13, was abandoned as dry at 2,943 feet. Papoose Oil Co.'s No. 3-A Rentie, SE cor. SW SW, Section 11-14-14, got sand at 1,779-86 feet. The well made 25 bbls. the first day after the shot. E. L. Connelly's No. 6 Ashley, C NW SW NW, Section 32-14-14, was dry and abandoned at 2,580 feet. J. J. Callihan and others' No. 5-A Doyle, CNL SE CNL S half SE, Section 23-15-12, first 24 hours after a shot in sand at 1,618-50 feet.

C. F. Noble has a machine in to drill No. 6 Adams, SW cor. NW SW, Section 20-15-12. Gray and the Devonian Oil Co. have a rig up for No. 1 Piloche, CNL S half SE, Section 23-15-12, and the Barbara Oil Co. has a rig up for No. 3 Douglas, CWL NE NW, Section 35-15-12. Crown Central Oil Co. has a rig up for No. 5 Fisher, NE cor. SE NW, Section 35-14-11. J. E. Wallace's No. 1 Colbert, NE cor. NW NW, Section 14-14-14, was cleaning out at 1,135 feet. Paige Brothers Oil Co. has a rig up for No. 1 Doyle, SW cor. Section 18-15-13. C. H. Lebow has a rig up for No. 13 Doyle, SE cor. NE SW, Section 15-13-14. Mid-Continent Petroleum Corp. has a rig on the ground for No. 18 Alexander, NE cor. NE SW, Section 12-13-13. The same company is building rig for No. 8 Danials, CWL NW SE, Section 12-13-13. J. L. Powell was drilling below 1,100 feet in No. 7 Sells, CWL NW SW, Section 9-14-15. The same operator's No. 8 Anderson, SE cor. NE, Section 8-14-15, is a 20-bbl. well at 1,185-1,215 feet. A rig is up for Wineland and others' No. 13 Anderson, NE cor. SE NE SE, Section 8-14-15.

John Burns' No. 1 Ginda, NE cor. SE NE, Section 12-12-10, Okfuskee County, got the top of the sand at 2,711-18 feet, and made 282 bbls. the first day. It may be drilled deeper.

M. P. Evans and others have a rig up for No. 2 Morgan, C SE SW SE, Section 3-12-11, Okfuskee County. Amerada Petroleum Corp.'s No. 12, C SE NE NW, Section 13-12-11, was drilling at 690 feet. Independent Oil & Gas Co. has commenced drilling No. 7, C SW NW NE, Section 13-12-11.

Indiahoma Refining Co. and others completed a 3,600-foot failure in No. 2 Bird, SE cor. SE NW, Section 14-12-11.

In McIntosh County, W. B. Pine's No. 3 Hawkins, C NW SW, Section 20-12-14 is a rig.

Porter Oil Co. has a 100-bbl. well in No. 5 Blackwell, NE cor. SW NW, Section 1-11-13, from sand at 2,850-54 feet.

Windsor Oil Co.'s No. 3 Jacobs, C SE SE SE, Section 15-11-11, Okfuskee County, is an 11,000,000-foot gas well at 2,100-16 feet, but it was not a completion. Windsor Oil Co. and Independent Oil & Gas Co.'s No. 3 Holmes, C NE SW SW, Section 22-11-11, was dry and abandoned at 3,972 feet. M. C. French has spudded in No. 6 Hawkins, SW cor. NE NE, Section 7-11-12, Okmulgee County.

Good Wells in Morris Area

C. H. Lebow's No. 11 Doyle, CEL NE SW, Section 15-13-14, made 592 bbls. the first day from sand at 2,436-42 feet. It may be drilled deeper. Roxana Petroleum Corp.'s No. 4 Scott, NW cor. SW SE, Section 15-13-14, started at 250 bbls. from sand at 2,435-44½ feet. Rebold and others' No. 3-A Morton, SE cor. NE, Section 16-13-14, was abandoned as dry at 2,523 feet. E. J. Lambert's No. 2 Segro, C SE NW, Section 20-13-15, was shut in as a gas well, good for 250,000 feet from sand at 1,020-37 feet. Skelton and others' No. 1-A Beaver, SE cor. NE SW, Section 20-13-15, was abandoned at 850 feet.

Independent Oil & Gas Co.'s No. 4 Larney, SE cor. SW NE, Section 18-12-12, got the top of the sand at 2,540 feet and at 6 feet in was good for 200 bbls. the first day, dropping to 95 bbls. It was not a completion.

Tidal Oil Co. is deepening No. 5 Brown, SE cor. NE, Section 28-15-13, present total depth 1,885 feet. Amerada Petroleum Co. has spudded in No. 13 Harjo, C SE NW, Section 13-12-11, Okfuskee County, and is rigging up No. 14, SW cor. NE NW, Section 13.

In this same district, the following completions were reported: Keaton & Gould's No. 2 Larney, CWL NE NE, Section 14-12-11, sand 2,565-73 feet, 40 bbls. initial production with a show of water; Windsor Oil Co.'s No. 3 Unallotted, SE cor. SW NW, Section 15-12-11, dry and abandoned at 3,600 feet. Josey Oil Co.'s No. 9 McCoy, NE cor. SW NW, Section 33-12-11, lost the hole at 2,760 feet, abandoned; McMahon, Kingwood Oil Co. and others' No. 12 Rentie, NE cor. NW SE NE, Section 36-12-11, dry and abandoned at 3,325 feet. Over the line in Okmulgee County, the Magnolia Petroleum Co.'s No. 2 Tiger, C SW NW, Section 4-12-12, dry and abandoned at 4,035 feet.

Roxana Petroleum Corp.'s No. 6 Scott, SW cor. NW SE, Section 15-13-14, is drilling below 500 feet. E. J. Lambert is drilling below 500 feet in No. 3 Segro, C SE NW, Section 20-13-15. Wigton & Long have a rig up for No. 1 Williams, SW cor. SE NE, Section 29-13-11. John Burns has a rig on the ground for No. 7 Simmons, NW cor. SW NW, Section 7-12-11. Independent Oil & Gas Co. have rigs on the ground for No. 6 Larney, CEL NE NW, Section 18-12-12; and No. 5 Larney, NE cor. SE NW, Section 18, and the Carter Oil Co. has a rig on the ground for No. 2 Kanard, SW cor. NW NE, Section 18-12-12.

In the Western Fields

The Galconela Oil Co.'s No. 1, SW cor. Section 29-27-2, southwest of Newkirk, Kay County, was abandoned as dry at 3,874 feet.

The Comar Oil Co. has spudded in No. 1, NE cor. SE, Section 20-29-1w, northwest of Braman. The Texas Co.'s No. 1 Day, SE cor. NE, Section 20-29-1w, made 88 bbls. naturally from sand at 2,086-91 feet, and was completed at that depth. Comar Oil Co.'s No. 6 Duncan, SW cor. NE SW, Section 21-29-1w, made 70 bbls. naturally from sand at 2,051-77 feet, and No. 7 Duncan, NE cor. NW SW, Section 21, started at 104 bbls. naturally from sand at 2,057-81 feet. Comar Oil Co.'s No. 3 Biddle, SE cor. NE SW, Section 5-28-1w, was drilling below 320 feet, and No. 1 Lawrence, SE cor. SW SE NW, Section 5-28-1w, was drilling at 585 feet.

The Oklahoma Northern Oil & Refining Co.'s No. 1 Lowery, NE cor. SW, Section 11-28-1e, was drilling below 1,800 feet. It is an old well drilling deeper. Samaster and others have abandoned the location for No. 1, NE cor. Section 18-27-1e.

The Texas Co. has a rig on the ground for No. 2 Day, SW cor. SE NE, Section 20-29-1w. D. W. Moore and others were moving in rig for No. 1 C SW SW NE, Section 31-28-1w.

The Blackwell Oil & Gas Co.'s No. 1, SE cor. SW NW, Section 8-27-1w, found sand at 3,483-91 feet, oil from 3,489-91 feet. It made 316 bbls. naturally, with 3,500,000 feet of gas. It will be drilled deeper.

The Marland Oil Co.'s No. 4, SE cor. NE, Section 1-26-2w, made a 50-bbl. pumper from sand at 2,955-73 feet. It is an old well drilled deeper. Same company's No. 5, NE cor. SE NW, Section 12-26-2w, is drilling at 115 feet. Marland Oil Co.'s No. 2-A North, NW cor. NE, Section 12-26-2w, was drilling at 560 feet. No. 3-A North, SW cor. NW NE, Section 12, is being rigged up. Twin State Oil Co.'s No. 1 Siler, NW cor. Section 22-25-2w, started at 105 bbls. of oil and 160 bbls. of water from sand at 4,054-76 feet, and arrangements were being made to plug back.

Shaffer Oil & Refining Co.'s No. 1 Branken, NW cor. NW NE, Section 32-24-4w, was drilling at 810 feet.

Mid-Continent Petroleum Corp. and Marland Oil Co.'s No. 1, SW cor. SE SW, Section 36-23-4w, pumped 30 bbls. a day from sand at 1,443-49 feet. It was not a completion.

The Wilcox Oil & Gas Co.'s No. 1

(Continued on Page 233)

REVIVAL OF REFINING IN EAST WITH INCREASE OF PORT RECEIPTS

By N. O. Fanning

NEW YORK, Feb. 13.—A considerable revival in refining activity is reported on the Atlantic Seaboard after a lull of several months. Oil is beginning to move around from the Gulf Coast at an increased rate, which is regarded as an indication of larger refinery runs at this time of year. The result should be a good-sized transfer of crude from storage in the Southwest to refinery storage on the Atlantic Coast, with a consequent decline in field stocks for the month of February, if the present movement continues.

The increase in receipts of oil at Atlantic ports from the Gulf have increased so far in February to the extent of almost 100,000 bbls. in the daily average. In addition, more oil is coming from the Pacific Coast and more is being imported, both from Mexico and South America.

In the face of this movement, and in addition the unfavorable weather and lower consumption, the refined oil situation on the Atlantic Coast is strong. During the past week the kerosene tank wagon market advanced 1 cent a gallon. This brings kerosene in the territory of the Standard Oil Co. of New Jersey on a par with gasoline, a situation undoubtedly abnormal. Although the advance in kerosene is justified, there are few who will admit kerosene has a market value equal to gasoline, and these look for an advance, perhaps 2 cents, in the tank wagon of gasoline within a few days.

Gasoline Tends Higher

Although the tank wagon gasoline market on the Atlantic Coast has not undergone a change since the Mid-Continent crude oil advances, refinery and tank car quotations have been marked up. Motor gasoline cannot be had in any important quantities at Atlantic Seaboard refineries for less than 14 cents, although small sales were reported made a week ago around 12½ cents.

The tank wagon market here is considerably out of line both with refinery and tank car prices, but with western Pennsylvania or Mid-Continent gasoline. Based on the Tulsa refinery price of 11 cents, the tank wagon market here should be, in the opinion of many, nearer 19 cents in the territory of the Standard Oil Co. of New York, compared with an actual quotation of 17 cents.

The New Jersey Co.'s tank wagon price of 15 cents is also regarded as out of line, by at least 2 cents a gallon.

Kerosene

The renewed strength in the price of kerosene on the Atlantic Seaboard is attributed to inroads into the supply through refining of furnace oil and Diesel oil, together with improved export demand. Exports of kerosene in cases, especially, have been improving.

Meanwhile sales of furnace oil and Diesel oil, as well as of kerosene have been increasing in the domestic field, partly as a result of the coal strike and partly due to the natural growth in use as related to furnace and Diesel oil with the more widespread use of oil burners and Diesel engines. Kerosene alone has advanced in price to any extent of the three products. The result may be the discouragement of the use of kerosene and encouragement in the use of furnace oil for home oil burning. Of course, kerosene and Diesel oil do not directly compete.

Fuel Oil

Fuel oils continue firm on the Atlantic Coast, with no indication, however, of an early change in prices. Diesel oil demand continues to gain, but bunker fuel oil is said to be standing still.

The increasing difficulty in obtaining tanker tonnage has added about 10 to 15 cents to the cost of bringing fuel oil to the Atlantic Coast either from the Gulf Coast or Mexico. Whether this will be reflected in the New York market is not yet certain.

The cost of delivering light Mexican crude at New York is now figured at $2.05 and heavy crude at $1.70. Bunker fuel oil is quoted here at $1.75.

Lubricating Oils

The market for lubricating oil continues soft, with no further price recessions. The movement of lubricants into industrial channels continues to be disappointing in most lines. The automotive demand has also take a drop due to the unfavorable turn in the weather.

Paraffin Wax

The paraffin wax market continues in about the same state as lubricants, industrial demand below "par." Exports are improving, so far as refined wax is concerned.

Petrolatum

The petrolatum market is quiet and unchanged. Cream, lily white, and snow white are in somewhat better demand.

Export Market

The oil export market at New York has been featured by an improvement in demand for cased oil. Shipments to South America, Africa and the Far East have been especially heavy.

During the week ended February 10 shipments of cased gasoline aggregated 3,209,240 gallons, and of cased kerosene 3,827,970 gallons.

Exports of lubricating oil in barrels have continued large, well over the 1,000,000-gallon weekly mark.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (figures in gallons unless otherwise noted in parenthesis):

	Week Ended		
Gasoline—	Feb. 10	Feb. 3	Jan. 27
Bulk		7,815,966	2,063,908
Barrels		59,500	
Cases	3,209,240	1,353,759	1,376,460
Kerosene—			
Bulk		2,366,622	4,582,733
Barrels		75,000	
Cases	3,827,970	2,237,380	1,634,080
Gas oil—			
Bulk			668,455
Lubricating oil—			
Bulk			2,534,745
Barrels	1,124,650	1,929,150	1,440,300
Cases	300,960	185,680	227,040
Lubricating grease—			
Barrels (lbs.)		1,262,250	
Paraffin wax—			
Bags (lbs.)	2,671,900	1,018,820	2,454,540
Barrels (lbs.)		826,500	756,675
Petroleum coke—			
Bags (lbs.)	629,200		
Crude oil—			
Bulk		236,452	
Barrels		40,350	36,500

The above figures include only export in lots of 500 bbls., 1,000 cases, or more.

The tanker charter market during the past week continued to display feverish activity, with rates making further sensational gains. A rate of 42 cents was reported for one vessel for the trade from Mexico to New York. When it is remembered that fixtures were recorded as low as 18 cents a barrel only two months ago, the extent of the rise can be appreciated.

Much new business was reported in the export field, ships from Gulf Coast to Europe bringing as high as 32 shillings a ton, as against a recent low of 22 shillings.

Oil Receipts Gain

All imports for the past two weeks have been from Mexico.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the past three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	Feb. 10	Feb. 3	Jan. 27
Gulf Coast	386,000	308,000	251,000
Pacific Coast	95,000	79,000	69,000
Imports	109,000	109,000	90,000
Total	590,000	496,000	410,000

Daily Averages By Months				
1926—	Gulf	Pacific	Imports	Total
January	279,000	59,000	96,000	434,000
1925—				
December	298,000	56,000	103,000	457,000
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000
May	312,000	81,000	145,000	538,000
April	353,000	78,000	101,000	532,000
March	273,000	82,000	135,000	490,000
February	262,000	51,000	147,000	460,000

The foregoing estimates are based upon the carrying capacity of incoming oil-laden tankers.

Producing End Point Gasoline Direct

Large Gasoline Yields Secured From Heavy Crudes and Fuel Oils. Results From Different Methods of Operation Explained

By Gustav Egloff*

The production of volatility gasoline of proper initial and end boiling point is not a difficult matter. This has been accomplished commercially and yields of 53 to over 78 per cent gasoline have been obtained by cracking Mid-Continent gas and topped crude oil. The treatment of volatility gasoline to water white color with clays and earths is not a serious problem, however, some volatility gasolines from the cracking of high sulphur and nitrogen oils are real treating problems. Some cracked gasolines contain more than one-half of one per cent of sulphur compounds. These have very bad odors and require some deodorizing. However, most Mid-Continent oils are relatively low in sulphur content and the volatility gasoline derived therefrom has fair odors which are readily improved without redistillation being necessary after slight treatments to commercial products. It would be advisable to market the cracked gasoline wherever possible without any treatment after leaving the cracking process for by subsequent treatment polymerization takes place, which means a loss of the most important anti-knock hydrocarbons in the pressure gasoline.

The data of typical commercial cracking runs follow showing the yields of volatility gasoline direct from the cracking process ranging between 53 and 78 per cent, the latter being on the basis of non-residuum mode of operation.

*Extract of address at meeting of American Institute of Mining and Metallurgical Engineers at New York City.

Cracked Distillate, Residual Oil and Coke Mode of Operation

Another flexible method for operating the Dubbs process is to produce cracked distillate while continuously withdrawing residual oil from the reaction chamber. This mode of operation is going on in a number of commercial plants. The following data covers several runs made in a plant operating on Kevin-Sunburst fuel oil. The yields of gasoline range between 59 and 61 per cent of the charging stock.

KEVIN-SUNBURST FUEL OIL

Results Cracking Fuel Oil in Unit Having 10 ft. by 30 ft. Reaction Chamber and Reflux Pump

Pressure, lbs.	190	200	200
Days on stream	2.83	3.71	3.33
Hours on stream	68	89	80
Charging Stock—		Fuel Oil	
Baume gravity	26.5	26.5	27.2
Total barrels charged	1869	2534	2791
Barrels day on stream	660	683	657
Results of cracking pressure distillate, total bbls.	1493	2091	1806
Baume gravity	50.0	49.5	49.0
Per cent of raw oil	79.9	82.49	82.4
Residuum and coke, total bbls.	339	391	359
Per cent raw oil	81.1	15.4	16.3
Unc. gas, total bbls.	37.4	52.1	26.6
Per cent raw oil	2.0	2.06	1.21
Coke, tons produced	47.49	54.3	50.27
Pounds per barrel of raw oil	61.0	42.9	45.9
Fuel consumption, total bbls.	57	48	59
Per cent raw oil	3.0	1.9	2.7
Results distilling pressure distillate gasoline, total	1107	1561	1307
Barrels per day on stream	391	421	392
Per cent raw oil	59.25	61.6	59.66
Per cent pressure distillate	74.2	74.7	72.4
Initial boiling point-end point	...	98-437	101-433
Baume gravity	52.0	53.3	52.6
Gas oil (P. D. Botts) total bbls.	269	428	397
Per cent raw oil	14.4	16.9	18.1
Per cent pressure distillate	18.0	20.4	22.0

In another plant operating on Kentucky fuel oil the yields of gasoline range between 58 and 61 per cent.

KENTUCKY FUEL OIL

Pressure, lbs.	175	175	180
Days on stream	1.83	2.31	2.15
Hours to stream	6.50	4	5½
Hours on stream	44	55½	51⅞
Hours cleaning	12	14	...
Complete cycle	62.5	73½	...
Charging Stock—		Kentucky Fuel	
Baume gravity	24	27	26
Total barrels charged	1503	2075	1945
Barrels per day on stream	821	898	907
Results of cracking:			
Pressure distillate, total bbls.	1089	1457	1466
Baume gravity	56.0	56.4	56.2
Per cent raw oil	72.4	70.3	75.4
Residuum, total bbls.	285	425	266
Per cent raw oil	18.9	20.5	13.7
Unc. gas and coke, bbls.	129	193	213
Per cent raw oil	8.6	9.3	10.9
Coke, tons produced	...	30	31
Pounds per barrel raw oil	...	28.9	31.9
Results distilling pressure distillate gasoline, total bbls.	879	1207	1192
Barrels per day on stream	480	522	554
Per cent raw oil	58.5	58.2	61.2
Per cent pressure distillate	80.7	82.9	81.2
End point	435	435	435
Baume gravity	55.6	56.4	56.0

Note: All figures are based on charged stock being fed into the system only once and do not include any rerunning.

The commercial cracking of California gas and fuel oil is going on with yields of over 50 per cent gasoline with residual oil being drawn off continuously. The California oils contain relatively high percentages of nitrogen and sulphur compounds. The cracked distillate contains in some cases as high as 1 per cent sulphur which is quite difficult to remove. Certain sulphur compounds are relatively simple to remove but others are highly resistant to most chemical reagents, but they can be removed yet at a relatively high cost compared to Mid-Continent oils.

The following tabulations cover the commercial data pertaining to the cracking of California gas and fuel oil. Results on cracking California gas and fuel oils in unit having 10 ft. by 10 ft. reaction chamber and reflux pump.

	California Oils			
	Gas	Gas	Fuel	Fuel
Pressure, lbs.	200	200	150	150
Days on stream	1.92	2.96	3.24	0.97
Hours on stream	46	71.16	77.75	23.25
Charging Stock—	Calif. Gas Oil		Calif. Fuel Oil	
Baume gravity	25.6	25.5	17.7	17.7
Total barrels charged	1322	2129	2209	599
Barrels day on stream	688	718	682	618
Results of cracking:				
Pressure distillate, total bbls.	908	1397	1145	393
Baume gravity	52.1	53.9	53.7	51.7
Per cent raw oil	68.7	65.58	51.83	65.5
Residuum, total barrels	275	365	776	67
Per cent raw oil	20.8	17.14	35.13	11.2
Unc. gas and coke, barrels	139	368	288	140
Per cent raw oil	10.5	17.28	13.04	23.3
Tons, coke produced	20.92	32.65	33.63	23.11
Pounds per barrel of raw oil	31.67	30.6	30.6	77.28
Fuel consumption:				
Per cent raw oil	4.39	2.3	4.26	5.7
Results distilling pressure distillate gasoline, total bbls.	762	1216	984	329
Barrels per day on stream	397	411	295	339
Per cent raw oil	57.7	57.07	44.59	54.8
Per cent pressure distillate	84.0	87.0	86.0	83.6
Initial boiling point- end point	94-435	94-435	96-437	102-439
Baume gravity	53.6	54.9	53.8	54.0

Note: All figures are based on the charging stock being fed into the system only once and do not include any rerunning.

VOLATILITY GASOLINE DIRECT

Summary of Runs Producing 437 End Point Distillate in a Unit Equipped With Reflux Pump and 10 ft. by 10 ft. Reaction Chamber

Type Operation—	Resid'm	Resid'm	Resid'm	Non-Resid.
Pressure, lbs.	200	200	200	200
Hours on stream	83	99	73	24
Days on stream	3.46	4.12*	3.04	1.00*
	Mid-Continent			
Charging Stock—				
Type:	Gas Oil	Gas Oil	Topped Crude	Topped Crude
Total barrels	2836	3235	2448	405
Barrels per day	820	785	805	405
Baume gravity	31.6	32.6	27.4	26.5
Results of cracking 437 e.p. gasoline—				
Total barrels	1755	2059	1301	319
Barrels per day	507	500	428	319
Per cent raw oil	61.9	63.6	53.1	78.9
Baume gravity	61.8	61.2	61.8	60.4
Residuum (est.):				
Total barrels	962	1041	1040	†
Barrels per day	278	253	342	†
Per cent raw oil	33.9	32.2	42.5	†
Baume gravity	19.2	19.3	18.0	†
Unc. gas and coke (est.):				
Total barrels	119	135	107	86
Barrels per day	35	32	35	86
Per cent raw oil	4.2	4.2	4.4	21.1
Coke produced:				
Tons	21.2	14.07	24.1	13.6
Fuel consumption:				
Liquid per cent raw oil	4.77	4.18	5.70	6.05

*Run shortened to keep this unit on regular cleanout schedule.

†Non-residuum.

All figures are based on charging stock being fed into the system only once and do not include any rerunning.

One of the most prolific fields in the United States is the Smackover heavy oil field. The daily production of Smackover heavy crude oil is 163,000 bbls. This heavy crude oil is a difficult oil to refine and is relatively highly corrosive. However, the topped crude is an excellent cracking stock producing not alone high yields of gasoline, but also a gasoline of superior anti-knock properties. Four typical commercial runs have been tabulated which show the percentage yields of gasoline between 48.9 and 52.1 per cent.

Another commercial plant using the Dubbs process and operating on Smackover heavy crude oil produces three products gasoline, coke and fuel oil, the latter a much superior fuel over that of the crude oil used as cracking stock.

SMACKOVER TOPPED CRUDE

Results on Cracking Heavy Smackover Topped Crude in a Unit Equipped With Reflux Pump and Single 10 ft. by 30 ft. Reaction Chamber

Pressure, lbs.	180	180	180	180
Hours fire to stream	7	6	6	6
Hours on stream	61	73	56	79
Hours cleaning	20	18	25	
Complete cycle	88	97	87	
Charging Stock—	Heavy Smackover Topped Crude			
Baume gravity	18.0	17.8	17.9	17.9
Total barrels by gauge	2129	2743	2095	2801
Barrels per day on stream	839	902	899	851
Results of cracking:				
Pressure distillate, total barrels	1368	1679	1374	1838
Baume gravity	51.7	51.2	52	51.8
Per cent R. O.	64.3	61.2	65.6	65.6
Residuum, total barrels	213	274	210	280
Per cent R. O.	10.0	10.0	10.0	10.0
Unc. gas and coke, total barrels	548	790	511	683
Per cent R. O.	25.7	28.8	24.4	24.4
Coke, tops produced	45	61	50.5	65
Pounds per barrel of R. O.	42.3	44.6	48.2	46.4
Fuel consumption—	Natural and unc. gas, not measured			
Results distilling pressed distillate gasoline—430 lab. cut.:				
Total barrels	1109	1343	1075	1413
Barrels per day on stream	437	442	461	429
Per cent raw oil	52.1	48.9	51.3	50.4
Per cent pressure distillate	81.0	79.9	78.3	76.9
Initial boil point-end point	106-425	106-436	104-436	104-436
Baume gravity	53.1	53.0	53.6	53.5
Gas oil (P. D. bottoms)				
Total barrels	176	243	223	328
Per cent raw oil	8.3	8.9	10.7	11.7
Per cent pressure distillate	12.9	14.5	16.2	17.8
Distillate loss, total barrels	83	94	76	97
Per cent raw oil	3.9	3.4	3.6	3.5
Per cent pressure distillate	6.1	5.6	5.5	5.3

Pressure Distillate and Coke

During one form of operation of the process while producing cracked distillate no residual oil is drawn from the recation chamber. This mode of procedure does away with the use of coking stills, bringing about a huge economic saving in the refining industry, for it is well known that it is very costly to coke oil, hence with the simultaneous cracking and coking of heavy oils another important development has taken place in the refining industry. The cracking and coking mode of operation requires no installation changes in the process, but just a slight change in the operating conditions.

Some commercial runs have just been made in a California plant which is cracking heavy oils on a non-residual oil procedure and the yield of gasoline is over 60 per cent.

The yields of Navy end point gasoline of seven typical commercial runs operating on Tonkawa topped crude oil ranged between 58 and 66 per cent of the oil undergoing heat and pressure treatment.

The following data cover the details of commercial results in a refinery using the none-residual oil type of operation.

NON-RESIDUAL OIL RUNS

Plant Equipped With 60-Tube Furnace—Hot Oil Reflux Pump 10 ft. by 10 ft. Reaction Chamber

Run No.	48	49	50	51	52	53
Pressure	170	165	165	176	185	185
Type feed			Overhead			
Per cent overhead			100			
Hours on stream	35	43	45	41	37	33
Days on stream	1.46	1.79	1.875	1.71	1.54	1.37
Charging Stock—			Tonkawa Topped Crude			
Baume gravity	28.7	28.6	29.2	28.0	27.9	28.1
Average per cent at 572°F. Engler	25.5	26.7	26.3	26.1	25.6	26.3
Total barrels	731	881	928	872	804	712
Barrels per day	501	492	495	510	522	520
Pressure distillate produced:						

Total barrels	627	766	795	776	722	627
Per cent of raw oil	87.2	86.9	85.6	88.9	89.8	89.4
Barrels per day	436	428	424	454	469	465
Baume gravity	54.3	52.0	53.1	53.6	54.0	53.5
Navy initial end point gasoline:						
Total, barrels	464	511	548	574	535	470
Per cent of pressure distillate..	72.8	66.8	68.9	74.0	74.1	73.7
Per cent of raw oil	63.5	58.1	59.6	65.8	66.5	66.0
Barrels per day	318	286	292	336	347	343
Coke, tons	21.0	24.0	26.5	26.4	25.6	19.65
Pounds, barrels R. O.	57.4	54.4	57.1	60.6	63.6	55.0
Fuel liquid, total	6.34	4.83	2.28	3.35	6.13	4.84
Liquid on stream to fires out	3.73	3.97	2.0	2.68	4.11	3.04
Gas, average cu. ft. per hour	9772	7969	9729	10312	10342	10456
Number hours burned	35	43	45	41	37	33

The greatest stumbling block in the development of the art of cracking was the problem of coke formation. Millions of dollars have been expended to overcome the problem of coke deposition on the heating element of the cracking still. A number of installations are in operation for the cracking of low coke forming oils and are strictly limited to selected cracking stocks. But the Dubbs process is not limited in any such manner. It is converting oils of low and high coke formation into high yields of gasoline. It is processing oils of less than 1 per cent to over 25 per cent by weight of the oil going to coke under the heat and pressure conditions of the system while producing yields of gasoline from 15 to over 78 per cent by volume of the oil being processed.

Comparison of various types of oils cracked in the Dubbs process together with gravity of raw oil, per cent gasoline derived therefrom, and amount of coke produced per barrel of raw oil processed.

	Baume Gravity	Per Cent N.E.P. Gasoline	Lbs. Coke per Bbl. Raw Oil	Lbs. Coke Per Bbl. Gasoline
Crude Oils				
Healdton crude:	29.6	45.0	5.0	11.1
Tarakan crude:	18.2	32.0	23.0	71.8
Panuco crude:	13.6	24.0	15.0	62.4
	12.6	28.0	29.0	103.5
Topped Crudes				
Lewistown, Montana, topped crude:	38.0	48.0	5.0	10.4
Smackover Southfield topped crude:	27.1	56.4	18.65	33.1
	25.5	54.0	18.8	34.8
	27.5	49.0	19.9	40.7
Tonkawa and Burbank topped crude:	25.0	46.0	27.0	58.7
	25.0	55.0	65.0	118.2*
	25.0	34.0	11.0	32.3
	25.0	36.0	10.0	27.8
	25.0	47.0	19.0	40.4
Robberson topped crude:	19.0	33.0	35.0	106.0
Heavy Smackover topped crude:	18.0	52.0	42.0	80.7
	17.8	49.0	44.6	91.0
	17.9	51.3	48.2	93.8
	17.9	50.4	46.4	92.1
Louisiana topped crude:	29.0	41.0	16.0	39.0
Ranger topped crude:	26.0	41.0	14.0	34.1
Tonkawa topped crude:	28.0	66.5	63.6	95.7*
	28.0	65.8	60.6	92.0*
	28.0	63.5	57.4	90.3*
Fuel Oils				
Kevin-Sunburst fuel:	27.0	61.6	42.9	69.7
Kentucky fuel:	28.3	53.9	20.0	37.1
	27.0	58.0	29.0	50.0
	26.0	58.0	25.0	43.1
Luling fuel:	23.4	47.18	14.0	29.7
Tonkawa and Burbank fuel and gas oil:	27.0	48.5	17.0	35.0
North Texas fuel:	25.0	40.0	34.0	85.0
Mid-Continent fuel:	27.7	45.0	12.7	28.2
	26.0	50.0	16.0	32.0
	26.5	78.9	67.3	85.3*
Venezuela fuel:	13.4	23.0	17.0	73.8
	13.0	26.0	27.0	103.8
Louisiana fuel:	26.0	36.0	12.0	33.3
Indiana, Illinois, Kentucky fuel:	23.0	33.0	13.0	39.4
Miri fuel oil:	19.0	26.0	16.0	61.5
	19.0	27.0	16.0	59.2
California, Long Beach residue:	18.0	37.0	25.0	67.5
	18.0	36.0	21.0	58.3
	18.0	38.0	22.0	57.8
	17.0	34.0	21.0	61.7
California fuel oil:	17.7	45.0	30.6	70.2
	17.7	55.0	77.0	140.0
Venezuela residue:	14.0	32.0	35.0	109.3
Panuco residue:	9.7	21.0	20.0	95.2
	9.7	18.0	17.0	94.4
Gas Oils				
California gas oil:	25.5	57.0	30.0	52.7
Pennsylvania gas oil:	38.4	43.2	2.0	4.62
Robberson gas oil:	33.0	45.0	6.3	14.65
Mid-Continent gas oil:	34.0	40.0	1.3	3.25
	32.0	76.0	5.4	7.1*
Venezuela gas oil:	27.0	35.0	9.1	26.0
	25.0	42.0	22.0	52.3
Mexican gas oil:	21.0	41.0	18.0	43.8
Mexican distillate:	26.0	39.0	10.0	25.6

*Non-residual oil run.

The conversion of heavy oils into gasoline produces a coke of high economic value. It is estimated that within 10 years' time that there will be over 10,000,000 tons of coke produced from the cracking reaction, and in briquette form will have an economic value of over $100,000,000 a year. It may well develop that coke produced from the cracking reaction in some instances will be the major product of the cracking reaction and gasoline the by-product.

Operation of the Process

The raw charging stock to be converted into gasoline and coke is pumped to the dephlegmator or directed to the heat element set within a furnace, or it may be diverted in part to the dephlegmator and part to the heating element as control conditions require. The raw oil passes through the continuous heating tube wherein it is raised to a temperature approximately 820 degrees Fahrenheit to 900 degrees Fahrenheit, under a pressure of upwards of 200 pounds to the square inch. The heated oil under heat and pressure passes into the expansion chamber and as a function of the temperature is vaporized therein with a deposition of coke within said expansion chamber. The vapors pass out of the expansion chamber through a pipe connection to the bottom of the dephlegmator wherein the heavier portions are condensed to a liquid while heat interchanged with the raw charging stock is being pumped into the dephlegmator. The mixture of raw charging stock and reflux condensate oil passes downwardly to the suction side of a hot oil pump, and then pumped through the heating tubes. The oil is raised to the cracking temperature under the pressure condition prevailing therein. The uncondensed vapors in the dephlegmator pass out through the top and via a pipe connection to a water condenser coil and as a liquid collected in a receiver and continuously passed to a gas separator.

The liquid from the gas separator is continuously passed to a storage tank. The pressure on the system is controlled by means of a gas release valve on the receiver. The excess gas over that necessary to control the pressure on the system is passed either through a scrubber with the gas dissolved in the pressure distillate or passes to a gas holder or is burned directly in the furnace of the cracking unit or in other parts of the refinery.

The temperature control of the dephlegmator is of such a character that volatility gasoline may be produced continuously. When a pressure distillate oil is desired having a higher end point than volatility gasoline the temperature control on top of the dephlegmator may be adjusted to that end.

When the operation desired is the production of a residual oil the control valve in the bottom of the chamber is opened so that residual oil passes continuously to a storage tank. However, when volatility gasoline and coke method of operation is desired the residual draw off valve at the bottom of the expansion chamber is closed and a slightly higher temperature is carried on the transfer liquid. This brings about a condition in which cracked vapor and coke are produced instead of cracked vapors, residual oil and coke.

A flow chart of the process and photographs of commercial installation accompany the article on the Dubbs process.

ROCKY MOUNTAIN FIELDS

(Continued from Page 56)

Poison Spider	10,520
Osage	7,230
Hamilton Dome	34,220
Lander	6,960
Byron	710
Pilot Butte	270
Lost Soldier	130,230
Ferris	1,480
Cat Creek	96,700
Sunburst	276,780
Lake Basin	3,465
Moffat	92,181
Iles Dome	4,003
Florence	12,400
Fort Collins	65,997
Boulder	775
Rangeley	3,100
Tow Creek	3,451
Hogback	15,740
Artesia	109,333
Rattlesnake	2,180
Miscellaneous	5,500
Runs for the Week	
Salt Creek	55,340
Teapot	1,440
Big Muddy	3,440
Grass Creek	2,840
Elk Basin	620
Greybull	15
Rock River	3,000
Lance Creek	2,460
Poison Spider	290
Osage	250
Hamilton Dome	1,100
Lander	210
Byron	20
Lost Soldier	3,850
Ferris	50
Simpson Ridge	270
Cat Creek	3,160
Sunburst	9,080
Lake Basin	110
Hogback	510
Florence	400
Moffat	3,165
Tow Creek	110
Fort Collins	2,375
Iles Dome	100
Rattlesnake	360
Boulder	25
Rangeley	100
Artesia	3,460
Total	98,150

CALIFORNIA CONCERNS LOWER LUB OIL PRICES

LOS ANGELES, Calif., Feb. 13.—In the face of a generally strengthening market and an optimistic future outlook, the undercutting of posted lubricating oil prices, which has been prevalent for the past several weeks, has at last forced the big companies to officially lower their lubricating oil price schedules. Two to three months ago, in an effort to increase its lubricating oil sales, the Pan American Petroleum Co. began selling under its competitors. Other companies in order to hold their business had to meet the lower prices but did not officially recognize the weakness of the lubricating oil market in the hopes that improved demand would soon correct the unstable conditions thereby returning prices to the level of their schedules then in force. The market, however, did not strengthen but continued to grow weaker so that three of the big companies recently revised their schedules downward by from one-half cent to 1½ cents, depending on the grade. Some marketers look for even further reductions.

Continued unsettled weather has been a factor in reducing the domestic consumption of both gasoline and lubricating oils. While gasoline sales feel this reduction, lubricating oils are much harder hit for the reason they move almost entirely along with domestic gasoline. Gasoline on the other hand, is moving in large volumes in the export trade with indications pointing to an increasing demand. Shipments to both Gulf Ports and the Atlantic Seaboard are holding up very well.

Natural gasoline continues to hold the strongest position of all oils on the local market. During the past week the California Gasoline Corp., which is the second largest exclusive manufacturer of natural gasoline on the Pacific Coast, was purchased by the California Petroleum Corp. Undoubtedly one of the principal reasons prompting the California Petroleum Corp. to take over these plants was the present scarcity of natural gasoline, which in all probability will continue. This step was necessary in order to assure a sufficient supply for its needs. It is very probable that other of the larger refining companies will acquire natural gasoline plants for the same reason. At present there is not enough natural gasoline to go around and refiners apparently believe that the best way to make their supply certain is to be in a position to manufacture all they need.

NORTH TEXAS MARKET IS GENERALLY WEAK

FORT WORTH, Tex., Feb. 15.—Reports late in the week showed that the refined oil market in North Texas territory was generally weak.

U. S. Motor oil was quoted at 10½ cents in the Wichita Falls district, with considerable trading at 10 cents. There was practically no trading even at these prices, and export gasoline was as quiet as Navy. Export gasoline was quoted at 12¾ cents but there was no buying, though some old contracts were filled.

Refiners are hopeful of the coming week. There are rumors of heavy orders to be placed, both for export gasoline and for U. S. Motor oil.

Kerosene is strong and active at 6⅝ to 6¾ cents for 41-43 water white kerosene, while the prime white grade is quoted at 6½ to 6⅝ cents.

The naphtha market is still the salvation of the North Texas refiner. A price of 9½ to 9¾ cents is prevailing on 46-48, 450 end point naphtha and there is a heavy trade. Many refiners have favorable contracts, some calling for a full car per day.

Fuel oil is showing a little improvement, though no material strengthening of prices. Wichita Falls refiners were quoting fuel oil at $1.25 to $1.30 per barrel late in the week and reported a fair volume of trading.

The strong crude situation seems to have no influence on the refined market. The usual premiums are being offered by independent refiners who seem to have no trouble keeping a supply of crude on hand.

PENNSYLVANIA MARKET HAS KEROSENE RECORD

OIL CITY, Pa., Feb. 13.—Outstanding among the features of the refined market during the week was Friday's advance of 1 cent a gallon in the tank wagon price for kerosene by the Atlantic Refining Co. This brought the tank-wagon market for kerosene in this State to the highest level in years. As a result kerosene market has gone wild and refiners are talking 8¾ cents tank car basis for 45 water white.

Gasoline during the week was about holding its own. The trade was all set for a tank wagon boost and when it did not materialize there was naturally some disappointment. Buying, however, during the past few days, has been brisk, probably in anticipation of higher quotations.

Wax is stronger and its position seems improved with increased demand.

Neutrals are stronger with more buying under way during the past three or four days.

Cylinder stocks held their own during the week.

Fuel oil continued fairly strong with no change for the week.

DEPLETION 30 PER CENT

WASHINGTON, Feb. 13.—The Senate has voted to allow oil men to set aside 30 per cent of their gross receipts from production as a depletion allowance. Under the House bill a discovery depletion allowance of 50 per cent was allowed but was contingent upon discovery. The Senate provision places discovery upon a more satisfactory basis and the industry hopes to hold the Senate provision in conference between the two houses.

REFINING AND MARKETING

CALIFORNIA TURNING TO CRACKING MAY DEVELOP SPECIAL PRODUCT

By L. M. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

Cracking operations by California refineries are just starting and, judging by the program being initiated by practically all the large refining companies, this is the most important development to be looked for during the coming couple of years.

Large-scale, successful cracking operations will not only have the effect of increasing the gasoline production on the Pacific Coast, making it possible for light crude oil production to go considerably farther in supplying the demand on the West Coast and probably in the East but there is another important element in the development which will tend to affect the gasoline market all over the country.

Certain California crudes are recognized as naturally having antiknock qualities due to napthene properties. It is known that certain companies in the East are making and marketing antiknock gasoline having California crude as the base.

With this the case, and with the fact pretty well established that cracked gasoline provides a motor fuel superior to straight-run gasoline, the present development in California has possibilities, according to some refiners, of the building up of a product on a large-scale commercial basis which can be offered in the markets of the East where antiknock gasoline is growing in demand, at probably premium prices.

In the State of California itself there is little demand for an antiknock fuel; in fact, the high quality of the straight run product is generally recognized. In sections of the Pacific Coast territory where more severe winter weather prevails there may be some future marketing specialization of antiknock motor fuels, but generally speaking, the opinion is held that the logical outlet for cracked California gasoline as an antiknock fuel is in the territory east of the Rocky Mountains.

In other words, the companies that are going forward with cracking plans in California are probably seeing the time when Eastern marketers will be buying from them at special prices. This may be some little way off, but judging from the fact that the industry east of the Rockies is now definitely committed to the marketing of an antiknock product, some such outcome appears possible.

Little Now Cracked

At the present time cracked gasoline amounts to less than one-half of 1 per cent of the total gasoline production of California refineries. The figures of the Bureau of Mines for December show a total gasoline production by California refineries of 160,908,000 gallons, divided as follows: 142,029,000 gallons, or 88 per cent, straight run; 63,000 gallons, less than one-half of 1 per cent, cracked, and 18,816,000 gallons, or 12 per cent, natural gas gasoline.

When the Bureau of Mines issued the first survey on cracking operations, dated June 15, 1925, it showed California with 15 units, with a total capacity of 13,900 bbls. of crude oil daily. Of this capacity, 2,300 bbls. was operating, 10,100 bbls. shut down, and 1,500 bbls. building. The only plant mentioned in the bureau's partial list was a 1,000-bbl. Cross unit at the Wilmington refinery of the Union Oil Co. of California.

The principal reason assigned for the slowness of California refiners to get into cracking operations is the overproduction of crude oil and of gasoline existing in the territory since 1923. Those in close touch with the situation on the coast say that within two years there will not be a company in California without an extensive cracking program.

There is now a fairly extensive building of cracking units, with an appreciable growth in the rate of installations indicated as the year advances. It is estimated that by the end of July cracked gasoline produced by California refineries will amount to 875,000 gallons daily, and by the end of the year, 1,250,000 gallons daily. This would be at the annual rate of 456,000,000 gallons. California's total gasoline production in 1925 was 1,728,882,000 gallons.

Much Experimental Work

Practically all the large refining companies in California are now going into cracking. Officers of some of these companies state that while they are operating some units virtually on a commercial scale that they prefer to regard them as experimental operations for the time being. A great amount of experimental work on cracking has been done, and is being done, by the various companies on their own and on licensed processes.

The Standard Oil Co. of California has made a large expenditure in cracking experiments. It is now building one Hanna-Clark-Dubbs unit at its Richmond plant, which will be operating some time in March or April. The company also has the rights to the Burton and Holmes-Manly, as well as to some of the Dubbs patents.

The Shell Co. of California has four 500-bbl. Dubbs units operating at its Martinez refinery and four 500-bbl. Dubbs units at its Wilmington refinery. Officials connected with this company state that their program is to undertake cracking of California crude on an increasing scale, dependent upon results accruing from present installations. The company now has four additional Dubbs units under construction at the Wilmington plant.

The Pan American Western Petroleum Co. has 19 units totaling 20,000 bbls. daily capacity under the Black patents which were recently taken over by the Gasoline Products Co., also holding the Cross patents. The Pan American Western is experimenting on a combination Black-Cross unit, results of which experiments are not yet available.

The Richfield Oil Co. is installing four 2,000-bbl. Cross units at its refinery at Hynes, outside of Long Beach.

Union Oil's Installation

The Union Oil Co. of California after operating one 1,000-bbl. Cross unit at its Wilmington plant for a year and a half, is now installing four 2,000-bbl. standard Cross units which will probably be in operation by June of this year. It is planned to install an additional four 2,000-bbl. Cross units shortly. These may contain minor changes based on the experiments being conducted on the Cross-Black combination unit at the Watson plant of the Pan American Western.

The General Petroleum Corporation is actively investigating cracking processes and is expected to make a large installation of some process this year. The same is true of the California Petroleum Corp.

The Associated Oil Co. has been operating a Dubbs unit at its Avon plant outside of San Francisco for several months, and is expected to make additional installations, probably following determination of results of the Hanna-Clark-Dubbs unit being installed by the Standard Oil Co. of California.

Smaller companies in California, such as the Marine, Vernon Oil Refining, Hancock Refining, McMillan Petroleum and Jameson Oil are expected to follow the lead of the larger companies and go into cracking.

NATURAL GASOLINE CONVENTION PLANS

The annual convention of the Association of Natural Gasoline Manufacturers will be held at the Hotel Mayo, Tulsa, May 5 and 6, according to an announcement by A. V. Bourque, secretary of the association.

L. F. Bayer, vice president of the Tidal Refining Co., is chairman of the program committee. Several interesting features of the program have already been arranged. The annual election of officers will take place at the May meeting. A. M. Ballard of the Sun Oil Co., Tulsa, and G. G. Oberfell of the Phillips Petroleum Co., Bartlesville, Okla., are also members of the program committee.

At a meeting of the board of directors of the association last week D. E. Buchanan, vice president of the Chestnut & Smith Corp., Tulsa, was appointed chairman of the committee on publicity. This committee which is one of the permanent committees of the association will collect and disseminate information regarding the natural gasoline industry. Other members of the committee are H. R. Johnson of the Akin Gasoline Co. and Messrs. Bayer, Oberfell and Bourque. E. L. Peck, Empire Gasoline Co., Bartlesville, Okla., president of the association, is an ex-officio member of the committee.

HADLICK SECRETARY OF NORTH DAKOTA, TOO

FARGO, N. D., Feb. 15.—Paul E. Hadlick, secretary of the Minnesota Petroleum Association, was elected secretary of the North Dakota Petroleum Association at the annual convention last week.

Mr. Hadlick will handle the work in addition to his duties with the Minnesota association, directing affairs from his Minneapolis office. His appointment inaugurated an organized campaign to put the North Dakota association on its feet financially and build up a strong membership.

Other officers of the association were reelected at the convention. They are: H. M. Wilson of the International Oil Co., Minot, N. D., president; H. A. Schmidt, vice president and treasurer, and L. A. Arbogast, Jr., of Jamestown, T. L. Berry of Fargo and K. H. Helgerud of Harvey, additional directors.

The association passed resolutions advocating an amendment to the State gasoline tax law providing that the money be placed into roads rather than into the general fund. Among the principal speakers were: N. E. Williams of the Security Traffic Bureau, Fargo; James Malloy of the Greater North Dakota Association, and Mr. Hadlick.

The 1927 convention also will be held at Fargo but will last two days, it was voted.

PIPE LINE TO BAYTOWN

The Houston Pipe Line Co. is laying a 16-inch pipe line connecting to the Baytown, Tex., refinery of the Humble Oil & Refining Co. The company is supplying gas to the refinery of the Galena-Signal Oil Co., and several manufacturing establishments along the Houston ship channel. The gas comes from Live Oak and Refugio Counties to which connection was recently made with 220 miles of pipe line. It is expected other refineries in the Gulf Coast will be supplied with gas, which is purchased on a basis of 20 cents per 1,000 feet.

WESTERN REFINERS CONVENTION COMPLETE

The first day of the Sixth Annual Convention of the Western Petroleum Refiners Association to be held at Fort Worth, Tex., March 2, 3 and 4, will be devoted to addresses and general discussions of interest to sales, traffic and credit managers, according to an announcement of the past week by Howard Bennette, managing director of the association. The program of the second day which will be devoted largely to the plant operators was announced last week.

The traffic men will hold their group meeting Tuesday morning, March 2, prior to the actual opening of the convention. R. R. Irwin, vice president of the White Eagle Oil & Refining Co. of Kansas City, and chairman of the Traffic Committee, will preside. Fayette B. Dow, Washington counsel for the association, will discuss docket 17,000 and the traffic and transportation situation. Other subjects which will come up for reports and discussions include: Consideration of application to railroads to permit settlement of tank car mileage by check; railroad car repair bills; wheel renewals; excessive repairs; state tank car taxes; uses of W. P. R. A. as clearing house for leasing of tank cars; miscellaneous freight rate cases of common interest and a paper by H. C. Mulroy of Marland Co., on "Traffic and Its Place in the Industry."

President F. A. Pielsticker will formally open the convention with his annual address Tuesday afternoon. This will be followed by Mr. Dow's report of his activities as Washington Counsel.

After these two addresses, the meeting will be resolved into group meetings for credits and sales managers. Mr. Irwin will speak before the joint meeting on "Wholesale Selling of Oils," and will be followed by A. B. Eisenhower, vice president of the Commerce Trust Co. of Kansas City, who will speak on "Credits."

A huge barbecue is being prepared by the refiners of Texas for the visiting members. The barbecue will climax the first day's program and nothing is being overlooked to make this the high spot of the convention.

STATE ORGANIZATION OFFICIALS IN CLUB

CHICAGO, Ill., Feb. 15.—All presidents and secretaries of State oil men's organizations have been invited to attend the regular meeting of the State Executives Club at the Congress Hotel on April 6, 7 and 8.

James A. Gilmore of the Michigan Independent Oil Men's Association is president and Paul E. Hadlick of the Minnesota Petroleum Association, secretary and treasurer. The club took permanent form at the Louisville convention of the National Petroleum Marketers Association last November.

TO RAISE CALIFORNIA TAX

By L. P. Stockman

LOS ANGELES, Calif., Feb. 13.—Judging by recent developments, another attempt will be made this year to increase the State gasoline tax and raise the present registration fee on pleasure vehicles from $3 to $10 each. The present gasoline tax is 2 cents, but it has been proposed that another cent be added. A similar attempt was defeated last year, due to a large extent, to the personal attention given the matter by A. L. Weil, chief counsel of the General Petroleum Corp.

TO INCREASE KENTUCKY TAX

FRANKFORT, Ky., Feb. 15.—Already passed by the Lower House of the State Legislature, a bill to increase the tax on gasoline from 3 to 5 cents a gallon, now is before the senate.

JENKINS CRACKING PROCESS

1,000 Barrel Standard Unit

Installed for

Kanotex Refinery Company

Arkansas City, Kansas

This unit, built for 140 pounds working pressure, is illustrated below.

The brick work at the left encloses the heating tubes only. The upper header drum is located at the left above the dutch oven, the lower header drum at the right and the soaking and vaporizing drum [or still] above.

The weather proof motor for driving the circulating propeller and the goose neck vapor line from the soaking and vaporizing drum to the reflux tower are seen in the upper center.

The reflux tower is between the two bubble towers and the reboiler is located at their base. The condenser box is above the receiving house where all control equipment is located.

The throughput of this unit exceeds the rated capacity by 30%

GRAVER Corporation Founded 1857

EAST CHICAGO, INDIANA

NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Brief Items for Plant Operators

NATURAL GAS ANALYSIS SUBJECT OF RESEARCH

Investigations and experimentation are under way along the lines of scientfic research in natural gas which is of much importance to the gasoline manufacturing industry. The work embraces the complete detail analysis of any or all natural gases by the use of liquid air. Briefly, the procedure being perfected consists of the liquefication of natural gas by the use of liquid air, and the subsequent separation of the liquefied gas into its separate fractions, even the isolation of the various members present. For example, from methane to and including hexane, or further—depending upon the nature of the gas.

During the past few years much work has been done along these lines in an effort to secure a test for accurate gas analysis securing in detail the exact proportionate constituents and components of any sample by fractionation, and at the same time develop this analytical test in simplicity and speed. The usual time spent in such anaysis may run from one day to ten per sample. It is reported, however, that certain investigators on the west coast have developed this test to a degree of remarkable accuracy and so simplified the working equipment and apparatus that the analysis can be made in three hours.

Two companies are at present developing this procedure. A. G. L. Hutchinson, research engineer for the Pacific Gasoline Co., has been given a research fellowship in the California Institute of Technology at Pasadena, Calif., and is conducting his investigation at the Institute. M. H. Scott, technologist with the Carbide & Carbon Chemicals Co., has been working along similar lines at Alhambra, Calif., for the past several months.

The development of this test to the point of speed that it may be applicable to plant control work if of great importance to the absorption gasoline industry. At present the findings of those engaged in this investigation are held secret, but it is reported the industry may expect definite and positive information of its perfection in the near future.

CHESTNUT & SMITH BUY HURLEY PLANTS

Purchase of the two natural gasoline plants of the Hur-Bar Gasoline Co. and the Hurley-Texas Gasoline Co. at Breckenridge, Tex., was completed the past week by Chestnut & Smith Corp.

The two plants, which are of the absorption type, have capacities of 6,000 and 7,200 gallons of gasoline, respectively, daily. Chestnut & Smith Corp. already has four plants at Breckenridge with a total capacity of 70,000 gallons daily.

Plans of Chestnut & Smith are to dismantle the newly acquired Hurley plants and turn the gas supply to the other four plants. However, the plants will be operated temporarily.

In addition to purchase of the two plants, Chestnut & Smith took over all tank cars leased by the Hurley Gasoline Co.

GROSSLY EXAGGERATED SAYS ROXANA OFFICIAL

Press reports regarding the building of a refinery near Chicago by the Roxana Petroleum Corp. have been "grossly exaggerated," according to T. F. Lydon, vice president of the corporation. Replying to an inquiry from The Oil and Gas Journal, Mr. Lydon stated that the company has no definite plans for the building of refinery at this time.

It has been officially announced by the seller that the Roxana Corp. has purchased a 500-acre tract on the east side of Hammond, Ind., between the Grand Calument River and the Indiana Harbor Belt Railway. This site is about 3 miles directly south of the East Chicago refinery of the Sinclair Refining Co.

It is assumed that the company expects to eventually build a refinery at that point. The closest pipe line connection of the company is at Wood River, Ill.

According to press reports the company had purchased a tract of land and would immediately start the construction of a refinery which would have an initial capacity of 10,000 bbls. daily. The company at the present time operates large refineries at Arkansas City, Kans., and Wood River, Ill.

SIMMS CO. TO BUILD ADDITIONAL REFINERY

Definite announcement was made during the past week by the Simms Petroleum Co. that it would erect an additional refinery and natural gasoline plant. The company at the present time operates a refinery at Dallas, Tex., purchased last year from the Clayton Oil & Refining Co.

The site for the refinery will be determined in a few days, either at Smackover or Eldorado, Ark., or some Gulf Port. It will operate with crude produced by the company in the Smackover Field of Arkansas. The plant will have a skimming capacity of 2,500 bbls. a day with a cracking installation which will make possible a gasoline recovery of 40 per cent from the heavy Smackover crude. A lubricating oil unit will also be installed.

In addition to the refinery, the company will build an absorption gasoline plant north of Smackover Creek in the Smackover Field. This plant will have a capacity of from 7,000 to 10,000 gallons daily.

GASOLINE PRODUCTS BUYS PAN-AMERICAN PATENTS

Gasoline Products Co. announces that it has purchased all inventions of John C. Black, relating to cracking conceived prior to December 1, 1925, and all issued patents and applications pending or that may be filed thereon. The purchase was made subject to certain existing licenses under the Black patents to the Pan American Petroleum Co., The American Petroleum & Transport Co. and the Standard Oil Co. of California, the vendors reserving the right to any royalties paid by such licensees, which, of course, acquired no rights under the Cross patents.

Gasoline Products Co. shortly after acquiring the Black inventions and patents granted licenses thereunder to all of its existing licensees without increasing the royalty rates already in force.

While Gasoline Products Co. is paying a substantial price for the Black inventions and patents, its present policy will be to include in its licenses of the Cross Process immunity under the Black patents, as well as under the Lewis patents and the patents of the Standard Oil Co. of Indiana, Standard Oil Co. of New Jersey and The Texas Co. It will also embody in the plans and specifications furnished to its licensees, such improvements disclosed by the Black patents as may increase the economy and utility of the Cross process as from time to time developed.

CALIFORNIA GASOLINE PLANTS ARE PURCHASED

Six natural gasoline plants with a daily production of 60,000 gallons, are involved in the sale of the holdings of the California Gasoline Corp. to the California Petroleum Corp., of Los Angeles, Calif. Five of the plants are located in the Long Beach Field with the sixth plant in the Rosecrans-Athens district.

The purchasing company operates two plants, one in the Signal Hill district and another at Santa Fe Springs. A third is under construction near Montebello. The company expects to form a separate concern to operate the nine natural gasoline plants which have a combined capacity of 100,000 gallons daily. The officers of the new corporation will be R. E. Bering, president; Jack Sherman, vice president; Jack Hare, secretary and treasurer and H. W. Parmelle, general superintendent. These are the same officers which developed the California Gasoline Corp. from one small absorption plant to six within a period of three years.

AMONG THE TECHNICAL MEN

Robert E. Wilson, assistant director of research for the Standard Oil Co. of Indiana, is one of the refining industry's foremost authorities on the manufacture of motor fuels and motor lubricants. Although his first direct connection with a refining organization started in 1922, Mr. Wilson had previously spent several years in research work connected with many of the latest developments in refinery practice and the utilization of refined products.

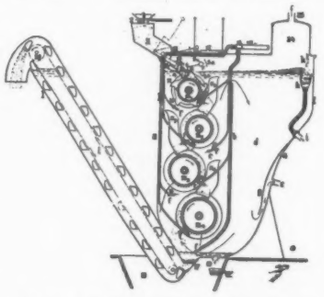
Robert E. Wilson

Mr. Wilson was for several years a member of the faculty of the Massachusetts Institute of Technology. He received the degree of Bachelor of Science from the institution after first graduating from the College of Wooster. As a member of the faculty he was the director of the Research Laboratory of Applied Chemistry and associate professor of Chemical Engineering from 1920 to 1922. In 1916 he was connected with the Research Laboratory of the General Electric Co., and 1917, with the Bureau of Mines. During the World War he was a captain in the Chemical Warfare Service.

In 1922 he accepted his present position with the Standard Oil Co of Indiana making his headquarters at the Whiting, Ind, refinery. Since that time Mr. Wilson has made several important contributions in solving the technical problems of the oil industry. He is a member of Committee D 2 (petroleum committee) of the American Society for Testing Materials. He is the author and co-author of several papers on oil and gas.

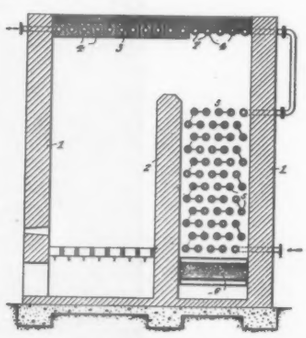
Recent Patents

1,567,983. APPARATUS FOR SEPARATING AND EXTRACTING MINERAL OILS FROM OILY SAND, BITUMEN FROM OILY CHALK, OILY SLATE, COAL, ETC. Heinrich Preller, Berlin-Friedenau, Germany. Filed Dec. 9, 1922. Serial No. 605,997. 7 Claims. (Cl. 196—14.)

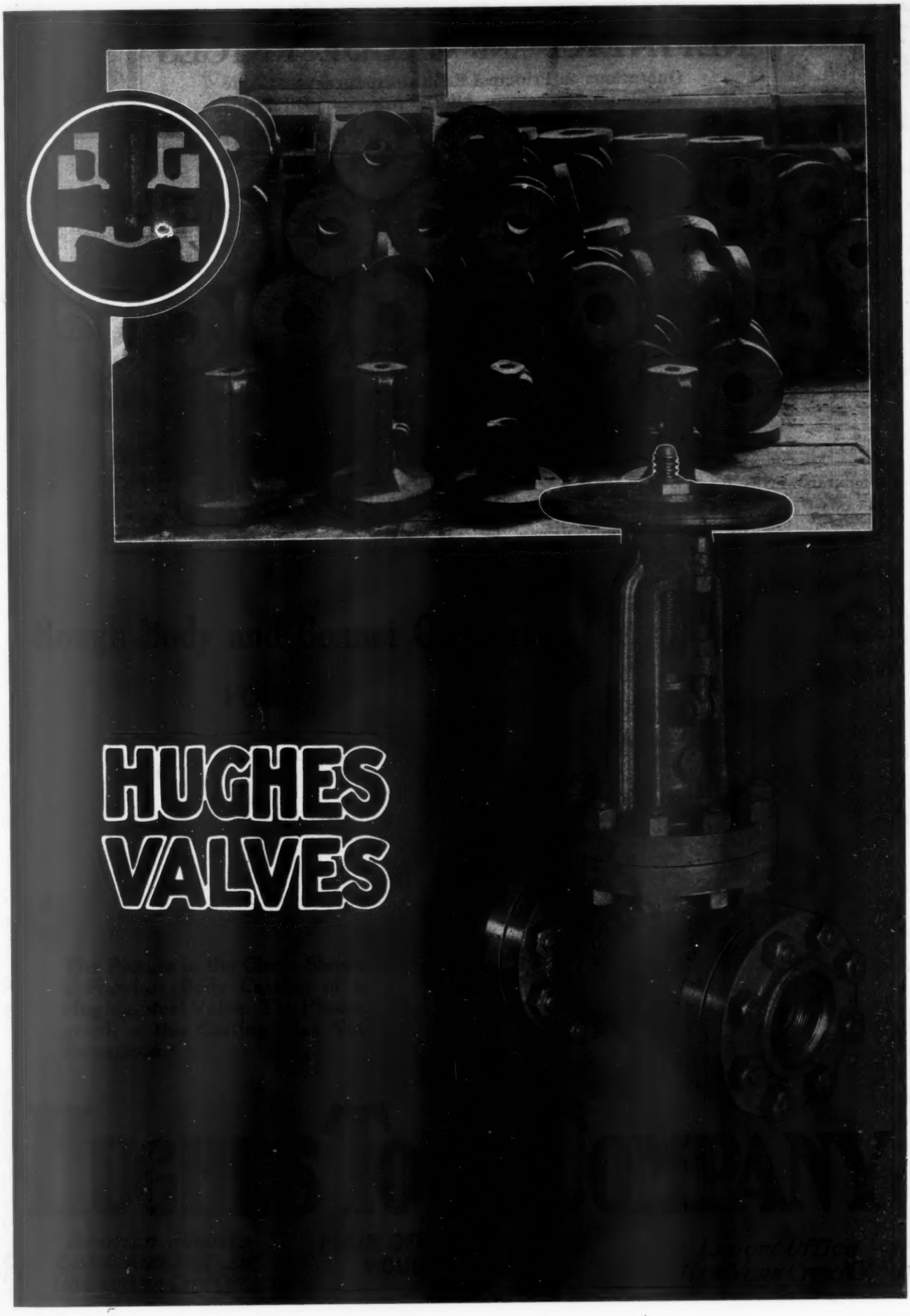


1. In a device for recovering mineral oils and bitumens from substances containing the same, a reservoir adapted to contain a treating liquid, a set of drums in said reservoir, the alternate drums of said set being rotable in opposite directions whereby the material undergoing treatment advances in a zigzag path.

1,568,182. Oil Still. John Primrose, New York, N. Y., assignor to Power Specialty Co., New York, N. Y., a corporation of New York. Filed July 2, 1921. Serial No. 482,135. Fifteen claims. (Cl. 196—110.)



5. In a furnace, a combustion chamber in which intense radiant heat is developed, a heat absorption chamber in open communication therewith, fluid conveying means located in said heat absorption chamber, said heat absorption chamber having wall portions in radiant heat receiving relation relative to said combustion chamber and in heat radiating relation to said fluid conveying means, and means upon said wall to prevent such heat radiation.


HUGHES
VALVES

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Feb. 16		Feb. 9		Feb. 2	
OKLAHOMA (Group 3)—						
50-52 450 end point	.09½	.09⅝	.09⅝	.09¾	.09¼	.09½
56-58 450 end point	.09¾		.09⅞	.10⅛	.09¾	.10¼
58-60 437 end point (U. S. Motor)	.10	.10½	.10½	.10¾	.10½	.10¾
60-62 400 end point	.11¾	.12	.12	.12¼	.12	.12¼
64-66 375 end point	.12¾	.13	.12⅞	.13	.13	.13¼
68-70 360 end point	.13¼	.13½	.13⅜	.13⅝	.13½	.13¾
KANSAS—						
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10¾	.11	.10¾	.11
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.09	.09¼	.09¼	.09½	.09	.09¼
50-52 440 end point (Naphtha)	.09¼	.09⅜	.09¼	.09⅝	.09	.09¼
56-58 450 end point	.09½	.09¾	.09¾	.10	.09½	.10
58-60 437 end point (U. S. Motor)	.09⅞	.10⅛	.10	.10¼	.10½	
60-62 400 end point	.11¾	.12	.11¾	.12	.11¾	.12¼
64-66 390 end point	.12⅝	.12¾	.12¾	.13	.13	.13¼
64-66 375 end point	.12⅞	.13⅛	.13	.13¼	.13¼	.13½
68-70 360 end point	.13¼	.13½	.13¼	.13½	.13½	.13¾
NORTH LOUISIANA—						
56-58 450 end point	.09¾	.10	.09¾	.10	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10¾	.11
60-62 400 end point	.12	.12¼	.12¼	.12½	.12¼	.12½
64-66 390 end point	.13¼	.13½	.13⅜	.13⅝	.13¼	.13½
64-66 375 end point	.13½	.13¾	.13⅝	.13¾	.13½	.13¾
ARKANSAS—						
58-60 450 end point	.10¼	.10½	.10½	.10¾	.10½	.10¾
58-60 437 end point (U. S. Motor)	.10½	.10¾	.10¾	.11	.10¾	.11
64-66 375 end point	.13¼	.13½	.13½	.13¾	.13½	.13¾
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.13¼	.13½	.13½	.13¾	.13½	.13¾
PENNSYLVANIA—						
52 Naphtha	.11¼	.11½	.11¼	.11½	.11¼	.11½
54 Naphtha	.11½	.11¾	.11½	.11¾	.11½	.12
56 Naphtha	.12	.12¼	.12	.12¼	.12	.12¼
58 Naphtha	.12½	.12¾	.12½	.12¾	.12¼	.12½
60 Gasoline	.13¼	.13½	.13¼	.13½	.13¼	.13½
62 Gasoline	.14	.14¼	.14	.14¼	.14	.14¼
64 Gasoline	.14½	.14¾	.14½	.14¾	.14½	.14¾
66 Gasoline	.16¼	.16½	.16¼	.16½	.16¼	.16½
68-70 Gasoline	.19½	.19¾	.19½	.19¾	.19½	.19¾
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.11	.11½	.11	.11½	.11	.11½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¼	.09¾	.09⅝	.09¾	.09½	.09¾
56-58 450 end point	.09¾	.10	.09⅞	.10⅛	.10	.10¼
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10½	.10¾	.10½	.10¾
60-62 400 end point	.11¾	.12	.12	.12¼	.12	.12¼
64-66 375 end point	.12⅝	.13	.13	.13¼	.13	.13¼
68-70 360 end point	.13¼	.13½	.13⅝	.13¾	.13½	.13¾

*Colorado points.

NATURAL GASOLINE

	Feb. 16		Feb. 9		Feb. 2	
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.09¾	.10	.09¾	.10	.09½	
Grade A, 72-79.9, 375 end point, rec. 90%	.10		.10		.09½	.09¾
Grade Double B, 84-92, 375 e.p., rec. 85%	.08¾	.09	.08¾	.09	.08½	.09
Grade B, 76-83.9, 375 end point, rec. 85%	.09	.09¼	.09	.09¼	.08¾	.09
Grade C, 80-90, 375 end point, rec. 78%	.08¼	.08½	.08⅝	.08¾	.08	
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10	.10¼	.09¾	.10	.09¾	.10
Grade A, 72-79.9, 375 end point, rec. 90%	.10	.10¼	.10		.09¾	.10
Grade Double B, 84-92, 375 e.p., rec. 85%	.09	.09¼	.08¾	.09	.08¾	.09¼
Grade B, 76-83.9, 375 end point, rec. 85%	.09	.09¼	.09	.09¼	.08¾	.09¼
Grade C, 80-90, 375 end point, rec. 78%	.08½		.08¾	.09	.08¼	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%	.10½		.10¾	.11	.09½	.10
Grade B, 76-83.9, 375 end point, rec. 85%	.09¾	.10	.09¾	.10	.09	.09¼
Grade C, 80-90, 375 end point, rec. 78%	.08¾	.09	.09¼	.09½	.08½	.08¾
CALIFORNIA—						
78-85 absorption, 360-390 end point	.15	.15½	.15	.15½	.15	.15½
78-84 compression, 350 end point	.15	.15½	.15	.15½	.15	.15½
CHICAGO DISTRICT (Based on Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.10	.10¼	.10	.10¼	.09¾	.10
Grade A, 72-79.9, 375 end point, rec. 90%	.10	.10¼	.10	.10¼	.09¾	.10
Grade Double B, 84-92, 375 e.p., rec. 85%	.09	.09¼	.09	.09¼	.08¾	.09
Grade B, 76-83.9, 375 end point, rec. 85%	.09	.09¼	.09	.09¼	.08¾	.09
Grade C, 80-90, 375 end point, rec. 78%	.08½		.08½	.08¾	.08¼	.08½

MOTOR NATURAL GASOLINE (BLENDS)

	Feb. 16		Feb. 9		Feb. 2	
OKLAHOMA (Group 3)—						
60-62 450 end point	.10	.10¼	.10½		.10½	
64-66 437 end point	.10½	.10¾	.11	.11¼	.11	.11¼
68-70 430-435 end point	.11		.11½		.11½	
NORTH TEXAS—						
64-66 437 end point	.10½		.10½	.10¾	.10½	.10¾
PENNSYLVANIA—						
*60-62	.12½	.12¾	.12½	.12¾	.12½	.12¾
*64-66	.12¾	.13	.12¾	.13	.12¾	.13
*66-68	.13		.13		.13	
*68-70	.13		.13		.13	
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.10	.10¼	.10¼	.10½	.10¼	.10½
64-66 437 end point	.10½	.10¾	.11	.11¼	.11	.11¼

*At Sistersville, W. Va.

BURNING OIL

	Feb. 16		Feb. 9		Feb. 2	
KANSAS—						
41-43 water white Kerosene	.07	.07¼	.06½		.06¼	.06½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06¾		.06⅜	.06½	.06¼	.06⅜
42-44 water white Kerosene	.06⅞	.07	.06⅝	.06¾	.06⅜	.06½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.07	.07¼	.06½	.06⅝	.06¼	.06⅜
42-44 water white Kerosene	.07¼	.07½	.06¾	.07	.06½	.06⅝
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.09¾		.09⅜	.09½	.09¼	.09⅜
NORTH TEXAS—						
41-43 water white Kerosene	.06½	.06¾	.06⅜	.06½	.06	.06¼
40-42 prime white Kerosene	.06½		.06	.06¼	.05⅞	.06
41-43 prime white Kerosene	.06½	.06⅝	.06¼	.06⅜	.06	.06⅛
42-44 water white Kerosene	.06¾	.06⅞	.06½	.06⅜	.06½	
ARKANSAS—						
41-43 water white Kerosene	.06⅞	.07	.06¼	.06½	.06¼	.06½
42-44 water white Kerosene	.07	.07¼	.06½	.06⅜	.06½	.06⅜
PENNSYLVANIA—						
43 Kerosene prime white	.08	.08¼	.07½	.07¾	.07¼	.07⅜
45 Kerosene water white	.08½	.08¾	.08	.08¼	.07⅜	.07½
46 Kerosene water white	.09	.09½	.08¼	.08¾	.08½	.08¾
47 Kerosene water white	.09½	.10	.09¼	.09½	.08¾	.09
34 Neutral	.07¾	.08	.07¾	.08	.07¾	.08
34 Sundebloom Neutral	.08¾	.09	.08¾	.09	.08¾	.09
36 Miners' Neutral	.07	.07¼	.07	.07¼	.07	.07¼
300 Mineral Seal	.07¾	.08	.07¾	.08	.07¾	.08
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07⅛	.08	.07⅛	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08½	.09	.08½	.09
Engine distillate, 42-44 450 end point	.08¼	.08½	.08¼	.08½	.08¼	.08½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06¾	.06⅞	.06¼	.06½	.06¼	.06⅜
42-44 water white Kerosene	.06⅞	.07	.06½	.06¾	.06½	

*Colorado points.

FUEL OILS

	Feb. 16		Feb. 9		Feb. 2	
KANSAS—						
24-26 Fuel Oil	1.25	1.30	1.30	1.35	1.32½	1.37½
32-36 Gas Oil	.03⅞	.04	.03⅞	.04	.03⅞	.04⅛
38-40 Distillate	.04	.04⅛	.04	.04⅛	.04	.04¼
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.15	1.17½	1.15	1.17½	1.17½	1.20
22-26 Fuel Oil (sellers' cars)	1.17½	1.20	1.17½	1.20	1.20	1.22½
24-26 Fuel Oil (buyers' cars)	1.22½	1.25	1.22½	1.25	1.25	1.27½
24-26 Fuel Oil (sellers' cars)	1.22½	1.25	1.25		1.25	1.27½
28-30 Fuel Oil (sellers' cars)	1.32½	1.35	1.35		1.35	1.37½
32-36 Gas Oil (dark)	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
32-36 Gas Oil (light)	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03⅞
36-38 Distillate	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03⅞
38-40 Straw Distillate	.03⅞	.04	.03⅞	.04	.03⅞	.04
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.25	1.27½	1.25	1.30	1.30	1.35
26-30 Fuel Oil	1.35	1.40	1.35	1.40	1.40	1.45
32-36 Gas Oil (dark)	.03½	.03⅝	.03½	.03⅝	.03⅝	
32-36 Gas Oil (light)	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
38-40 Straw Distillate	.03¾	.04	.03¾	.04	.03⅞	.04
NORTH LOUISIANA—						
18-20 Fuel Oil	1.15	1.17½	1.15	1.20	1.12½	1.15
32-36 Gas Oil	.04		.04	.04⅛	.03¾	.03⅞
ARKANSAS—						
38-40 Distillate	.04	.04⅛	.04	.04⅛	.04	.04⅛
32-36 Gas Oil	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03⅞
16-20 Refinery Fuel Oil	1.10	1.15	1.20	1.25	1.20	1.25
GULF COAST (South Texas)—						
Gas Oil	.05	.05¼	.05	.05¼	.05	.05¼
Fuel Oil	1.65	1.70	1.65	1.70	1.65	1.70
PENNSYLVANIA—						
30-34 Fuel Oil	.05¾	.06	.05¾	.06	.05¾	.06
36-40 Fuel Oil	.06¼	.06½	.06¼	.06½	.06¼	.06½
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-35 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tidewater)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.20	1.22½	1.25		1.27½	1.30
18-22 (El Dorado)	1.15	1.17½	1.20	1.25	1.22½	1.25
18-20 (Smackover)	1.10	1.15	1.10	1.15	1.05	1.10
32-36 Gas Oil	.03¾	.03⅞	.03¾	.04	.03¾	.03⅞
36-38 Distillate	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03⅞
38-40 Straw Distillate	.04	.04⅛	.04	.04⅛	.04	.04¼

LUBRICATING OILS AND WAX

	Feb. 16		Feb. 9		Feb. 2	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
180 vis., 3 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
200 vis., 3 color, 23-28 cold test	.11¼	.11¾	.11¼	.11¾	.11¼	.11¾
200 vis., 4 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
220 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
220 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
280 vis., 3 color, 25-30 cold test	.16¼	.17	.16¼	.17	.16¼	.17
280 vis., 4 color, 25-30 cold test	.16	.16½	.16	.16½	.16	.16½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
180 vis., 6 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 5 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11½
200 vis., 6 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
220 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

220 vis., 6 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 6 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
Cylinder Stocks:						
180-200 vis., S. R. green, 40-45 cold test	.08½	.11	.08½	.11	.09	.11
190-200 vis., S. R. green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
170-190 dark green, 40-45 cold test	.06½	.07	.06½	.07	.06½	.07
190-200 vis. @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35
200-210 vis. @ 210 "E" Bright Stock	.30	.31	.30	.31	.30	.31
150 vis. @ 210 "E" Bright Stock	.27	.28	.27	.28	.27	.28
150 vis. @ 210 "D" Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.04⅞	.05	.04⅞	.05	.04⅞	.05
PENNSYLVANIA—						
150, 3 color	.21		.20		.20	
180, 3 color	.25		.24½		.24	
200, 3 color	.27¼		.26¾		.26½	
220, 3 color	.28½		.28		.28	
600, steam refined	.18¾		.18¼		.18¼	
635, steam refined	.22¼		.21¾		.21¾	
650, steam refined	.23½		.23		.23	
600, Pennsylvania flash	.27		.26½		.26½	
630, Pennsylvania flash	.36		.35		.35	
*550, E filtered	.20¾		.20		.20	
600, E filtered	.21½		.21½		.21½	
*600, E filtered	.22¾		.22		.22	
600, D filtered	.27½		.27		.27	
550, E filtered	.20		.19		.19	
550, D filtered	.22¼		.21¾		.21¾	
Pennsylvania Bright Stock	.38½		.38½		.38½	
122-124 White Crude Scale Wax	.05⅝	.05½	.05⅝	.05½	.05⅝	.05½
†124-126 White Crude Scale Wax	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07½	.08	.07½	.08	.07½	.08
No. 2½ color, 150 vis., pale oil	.10	.10½	.10	.10½	.10	.10½
No. 3 color, 200 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 3½ color, 300 vis., pale oil	.13½	.14	.13½	.14	.13½	.14
No. 3¾ color, 500 vis., pale oil	.15½	.16	.15½	.16	.15½	.16
No. 4 color, 750 vis., pale oil	.19½	.20½	.19½	.20½	.19½	.20½
No. 1½ plus color, 150 vis., pale filtered	.22		.22		.22	
No. 2 plus color, 200 vis., pale filtered	.23½		.23½		.23½	
No. 2 color, 300 vis., pale filtered	.27½		.27½		.27½	
No. 2½ color, 500 vis., pale filtered	.31½		.31½		.31½	
No. 2½ color, 750 vis., pale filtered	.41½		.41½		.41½	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.10	.10½
No. 5 to 6 color, 300 vis., red oil	.12	.12½	.12	.12½	.12	.12½
No. 5 to 6 color, 500 vis., red oil	.13½	.14	.13½	.14	.13½	.14
No. 5 to 6 color, 750 vis., red oil	.18	.18½	.18	.18½	.18	.18½
CALIFORNIA—						
130 pale, 2½-3 color	.10	.10½	.10	.10½	.10	.10½
200 vis., 2½-3 color	.13½	.14½	.13½	.16	.13½	.16
300 vis., 3 -3½ color	.15	.16	.15	.17½	.15	.17½
350 vis., 3½-4 color	.16½	.17	.16½	.19	.16½	.19
400 vis., 3½-4 color	.18	.19	.18	.20½	.18	.20½
Red Neutrals:						
200 vis., 4½-5 color	.12	.13	.12	.14½	.12	.14½
300 vis., 5 -6 color	.13	.14	.13	.15½	.13	.15½
400 vis., 5 -6 color	.15	.16	.15	.17½	.15	.17½
500 vis., 4½-5 color	.18	.19	.18	.21	.18	.21
500 vis., 6 -6½ color	.16	.17	.16	.19	.16	.19
600 vis., 6½ plus color	.17	.18	.17	.19½	.17	.19½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Feb. 16	Feb. 9	Feb. 2
U. S. Motor Gasoline, 58-60 437	.14	.13	.13
*Bunker Oil 14-16 Be.	1.75	1.75	1.75
*Diesel Oil, New York City	2.20	2.20	2.20
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 28 plus	.05½	.05½	.05½
41-43 Kerosene prime white	.07½	.07¼	.07¼

*Lighterage 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	Feb. 16	Feb. 9	Feb. 2
58-60 Be. gravity, in cases	.28.15	.28.15	.27.15
Standard white Kerosene, in cases	.18.40	.18.40	.17.90
Water white Kerosene, in cases	.19.90	.19.90	.19.40
Export Gasoline, 64-66 Be.	.17	.16	.16
†Lubricating Oils (in bulk):			
Cylinder Stock, extra filtered, 600 bbls.	.34	.34	.34
Cylinder Stock, light filtered, 600 bbls.	.29	.29	.29
No. 5 Bright Stock, .897 spec. grav.	.40	.40	.40
No. 1 White Neutral, .878 spec. grav.	.35	.35	.35
Pale oil, "25" .898 spec. grav.	.12	.12	.12
Pale oil, "28" .892 spec. grav.	.07½	.07½	.07½
Special "A" red oil, .897 spec. grav., 170 vis.	.10½	.10½	.10½
No. 2 red oil, .903 spec. grav., 212 vis.	.11	.11	.11
No. 1 red oil, .905 spec. grav., 265 vis.	.13	.13	.13
Polar red oil, .903 spec. grav., 295 vis.	.13½	.13½	.13½
Paraffin Wax:			
120-122 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
125-127 a.m.p., per lb.	.06¼	.06¼	06¼
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07⅛	.07⅛	.07⅛
Petrolatum, in bbls., car load lots, per lb.:			
Amber	.03½	.03½	.03⅝
Light amber	.03¾	.03¾	.03⅞
Cream	.06	.06	.06
Lily white	.08	.08	.08
Snow white	.10	.10	.10

†All lub prices in barrels.

LOS ANGELES EXPORT PRICES

	Feb. 16		Feb. 9		Feb. 2	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor Gasoline, 54-56 437 end point	.08	.10	.08	.10	.08	.10

CRUDE OIL PRICES

February 13.—Paragon Development Co. advanced Cumberland, Monroe and Barren County crudes in Kentucky 10 cents.

Arkansas and North Louisiana

Caddo, 38° and above	$2.20
35° to 37.9°	2.10
32° to 34°9°	2.00
Below 32°	1.85
Homer, 35° and above	1.95
32° to 34.9°	1.85
31° to 32.9°	1.75
Below 31°	1.60
Haynesville, 33° and above	1.85
Below 33°	1.75
El Dorado, 33° and above	1.85
Below 33°	1.75
Bull Bayou, 38° and above	2.00
35° to 37.9°	1.85
32° to 34.9°	1.70
Cotton Valley	1.10
De Soto	2.05
Crichton	1.85
Bellevue	1.65
*Stephens, Ark:	
Below 26°	1.30
26° and above	1.50
**Calion	.95
†Urania	1.50
Smackover:	
Below 24°	1.00
24° to 24.9°	1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° and above	1.40

*Posted by Atlantic Oil Producing Co.
†Posted by Louisiana Oil & Refining Co.
**Posted by Gulf Pipe Line Co.

Wyoming, Montana, New Mexico and Colorado

Rock Creek, (Wyo.)	2.00
Salt Creek:	
29° to 29.9°	1.48
30° to 30.9°	1.56
31° to 31.9°	1.64
32° to 32.9°	1.72
33° to 33.9°	1.80
34° to 34.9°	1.88
35° to 35.9°	1.96
36° to 36.9°	2.04
37° and above	2.12
Big Muddy	2.00
Mule Creek	1.50
Grass Creek (light)	2.15
Grass Creek (heavy)	.90
Elk Basin	2.15
Lance Creek	2.15
Osage	2.15
Cat Creek (Mont.)	2.15
Sunburst (Mont.)	1.15
Lost Soldier	1.10
Greybull and Torchlight	1.90
Hamilton Dome	1.55
Hogback, (N. Mex.)	1.95
Artesia, (N. Mex.)	1.70
Florence, (Colo.)	1.35

Lost Soldier and Lander based on contracts.

Oklahoma, Kansas, North and East Central Texas

*Prairie Oil & Gas Co. and other major purchasing companies except as noted.

28° to 28.9°	1.40
29° to 29.9°	1.48
30° to 30.9°	1.56
31° to 31.9°	1.64
32° to 32.9°	1.72
33° to 33.9°	1.80
34° to 34.9°	1.88
35° to 35.9°	1.96
36° to 36.9°	2.04
37° to 37.9°	2.12
38° to 38.9°	2.20
39° to 39.9°	2.28
40° to 40.9°	2.36
41° to 41.9°	2.44
42° to 42.9°	2.52
43° to 43.9°	2.60
44° to 44.9°	2.68
45° to 45.9	2.76
46° to 46.9°	2.84
47° to 47.9°	2.92
48° to 48.9°	3.00
49° to 49.9°	3.08
50° to 50.9°	3.16
51° to 51.9°	3.24
52° and above	3.32

*Champlin Refining Co. posts a schedule of 25 cents additional on each grade of crude above 38° gravity.

*Humble Oil & Refining Co.
(North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran.)

Below 25°	1.08
25° to 25.9°	1.16
26° to 26.9°	1.24
27° to 27.9°	1.32

Other grades same as Prairie Oil & Gas Co.

*Magnolia Petroleum Co.
(Oklahoma, Kansas and Texas)

Below 28°	1.20

Other grades same as Prairie Oil & Gas Co.

Iatan	1.15
Mirando City	1.05
Corsicana heavy	1.15
Thrall	1.00
Panhandle:	
(Posted by Kay County Gas Co.)	
Below 31°	1.15
31° to 33.9°	1.30
34° to 36.9°	1.50
37° to 39.9°	1.65
40° and above	1.70
Gypsy Oil Co.—	
Bristow, Glenn Pool, Morris and Perryman:	
25° to 25.9°	1.16
26° to 26.9°	1.24
27° to 27.9°	1.32

Other grades same as Prairie Oil & Gas Co.

Gulf Coast and Southwest Texas

Grade A	1.50
Grade B	1.25
Luling (Magnolia)	1.10
Laredo (Magnolia Petroleum Co.)	.85
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	2.05
Webb, Jim Hogg, Zapata	1.15
*High Island	1.20
Sour Lake (36 gravity)	1.70
Boling deep sand	1.75
Piedras Pintas	1.75

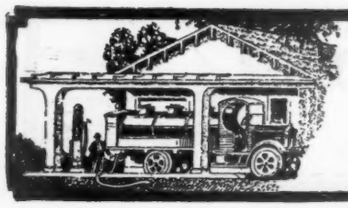
*Posted by Sun Oil Co.

Somerset crude, posted by Grayburg Oil Co. follows same grades and prices as North and East Central Texas crudes.

Eastern States

Penna Grade Oil in New York Transit Lines	3.90
Bradford District Oil in National Transit Lines	3.90
Penna Grade Oil in National Transit Lines	3.80
Penna Grade Oil in Southwest Pa. Pipe Lines	3.80
Penna Grade Oil in Eureka Pipe Line Lines	3.75
Penna Grade Oil in Buckeye Pipe Line Lines	3.65
Cabell Grade Oil in Eureka Pipe Line Lines	2.20
Corning Grade Oil in Buckeye Pipe Line Lines	2.25
Somerset Medium Oil in Cumberland Pipe Line Lines	2.30
Somerset Light Oil in Cumberland Pipe Line Lines	2.45
Ragland Grade Oil in Cumberland Pipe Line Lines	1.15
Gaines	2.95
Keister (Butler County)	2.45
Lima	2.22
Wooster	2.25
Illinois	2.12
Indiana	2.00
Princeton	2.12

(Continued on Page 228)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Feb. 16.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	17.0	19.0	...	12.0

Tank wagon prices on April 19, 1922: g. up 1¼c; May 8, g. up 1c; June 27, g. and k. up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c; k. up 1c.

Decatur, Ill.	17.2	19.2	...	12.5
East St. Louis	16.1	18.35	...	11.6
Joliet	17.4	19.4	...	12.7
Peoria	17.2	19.2	...	12.7
Quincy	17.2	19.2	...	12.3
Davenport, Ia.	19.5	21.5	2.0	12.9
Des Moines	19.5	21.5	2.0	12.9
Keokuk	19.5	21.5	2.0	12.9
Sioux City	19.0	21.5	2.0	12.5
Duluth, Minn.	20.5	22.5	2.0	13.6
Minneapolis	20.2	22.2	2.0	13.6
La Crosse, Wis.	20.2	22.2	2.0	13.1
Milwaukee	20.1	21.1	2.0	12.3
Madison	19.3	21.3	2.0	12.5
Detroit, Mich.	19.8	21.8	2.0	13.2
Grand Rapids	19.7	21.7	2.0	13.1
Saginaw	19.9	21.9	2.0	13.3
Evansville, Ind.	20.0	22.0	3.0	12.5
Fort Wayne	20.4	22.4	3.0	12.9
Indianapolis	20.2	22.2	3.0	12.7
South Bend	20.4	22.4	3.0	12.9
Fargo, N. D.	20.9	22.9	1.0	15.6
Huron, S. D.	19.0	21.0	3.0	14.1
Sioux Falls	18.0	20.0	3.0	13.6
*K. C., Mo.	19.9	21.9	3.0	11.3
*Springfield	19.8	21.8	3.0	12.2
*St. Louis	18.6	20.9	2.5	12.0
*St. Joseph	19.0	21.0	2.5	11.9
Wichita, Kan.	18.3	20.3	2.0	11.8
Bartlesville, Ok.	17.4	20.4	3.0	10.9

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 16.0.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1¼ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Newark, N. J.	16.0	18.5	...	15.0
Atlantic City	16.0	....	...	15.0
Annapolis, Md.	18.0	....	...	14.5
Baltimore	18.0	21.0	2.0	12.0
Cumberland	18.0	21.0	2.0	15.0
Washington	18.0	21.0	2.0	14.0
Norfolk, Va.	19.0	22.0	3.0	15.0
Petersburg	19.0	....	3.0	15.0
Danville	19.0	....	3.0	15.0
Richmond	19.0	22.0	3.0	15.0
Roanoke	19.0	22.0	3.0	15.0
Keyser, W. Va.	19.5	....	3.5	15.0
Charleston	19.5	22.5	3.5	15.0
Parkersburg	19.5	22.5	3.5	15.0
Wheeling	19.5	22.5	3.5	15.0
Charlotte, N. C.	20.0	23.0	4.0	15.0
Hickory	20.0	....	4.0	15.0
Mt. Airy	20.0	....	4.0	15.0
Salisbury	20.0	....	4.0	15.0
Charleston, S.C.	21.0	24.0	5.0	15.0
Columbia	21.0	24.0	5.0	15.0

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
*Pittsburgh, Pa.	17.0	22.0	...	16.0
*Philadelphia	17.0	22.0	...	16.0
*Scranton	17.0	22.0	...	16.0
*Allentown	17.0	22.0	...	16.0
Altoona	17.0	22.0	...	16.0
*Erie	17.0	22.0	...	16.0
Dover, Del.	19.0	22.0	2.0	16.0
Wilmington	19.0	22.0	2.0	15.0
Springf'd, Mass.	17.0	19.0	...	14.5
Worcester	17.0	19.0	...	14.5
Boston	17.0	20.0	...	14.0
Providence, R.I.	18.0	21.0	1.0	14.0
Hartford, Conn.	19.0	21.0	2.0	13.5
New Haven	19.0	22.0	2.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Atlanta, Ga.	23.0	26.0	3.5	16.0
Augusta	23.0	26.0	3.5	15.5
Macon	23.0	26.0	3.5	14.5
Savannah	18.0	21.0	3.5	14.0
Birm'gham, Ala	20.0	23.0	2.0	15.5
Mobile	19.0	22.0	2.0	13.0
*Montgomery	21.0	24.0	3.0	16.5
Clarksdale, Miss	20.0	23.0	3.0	13.0
Jackson	20.0	23.0	3.0	12.0
Natchez	19.5	22.5	3.0	12.5
Vicksburg	19.5	22.5	3.0	12.5
Jack'ville, Fla.	21.0	24.0	4.0	14.0
Miami	23.0	26.0	4.0	15.5
Pensacola	21.0	24.0	4.0	14.5
Tampa	21.0	24.0	4.0	14.0
Covington	21.0	24.0	3.0	15.0
Lexington, Ky.	19.0	22.0	3.0	15.0
Louisville	21.0	24.0	3.0	13.0

*In addition to the State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cents on kerosene.

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Dallas, Tex.	16.0	19.0	1.0	12.0
Fort Worth	14.0	16.0	1.0	11.0
Houston	16.0	19.0	1.0	12.0
San Antonio	15.0	16.0	1.0	11.0
El Paso	18.0	19.0	1.0	13.0
Texarkana	17.0	20.0	1.0	13.0
Muskogee, Ok.	20.0	23.0	3.0	10.0
Oklahoma City	20.0	23.0	3.0	12.0
Tulsa	18.0	19.0	3.0	12.0
Little Rock	19.0	22.0	4.0	14.5
Ft. Smith, Ark.	19.0	22.0	4.0	14.5

*The following is the schedule of discounts on gasoline adopted by the Magnolia Petroleum Co. in Texas sales and the discounts are graded according to gallonage: Over 750 gallons a month, ⅜ cent; over 2,000 gallons, ⅝ cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1⅞ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases as in the tank wagon discounts.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
All Ohio points	21.0	23.0	2.0	14.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Casper, Wyo.	20.5	22.5	2.5	14.0
Cheyenne	21.5	23.5	2.5	15.5
Albuquerque, N. Mex.	24.5	27.5	3.0	17.5
Salt Lake, Utah	23.5	25.5	3.5	15.0
Denver, Colo.	20.0	22.0	2.0	15.5
Pueblo	19.0	21.0	2.0	15.5
Butte, Mont.	22.0	22.0	2.0	17.0
Helena	24.0	26.0	2.0	18.0
Boise, Idaho	25.0	27.0	3.0	20.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Albany, N. Y.	18.0	....	...	16.0
*New York	18.0	....	...	16.0
Buffalo	16.0	....	...	16.0
Rochester	16.0	....	...	16.0
Syracuse	17.0	....	...	16.0
Boston, Mass.	18.0	....	...	....
Providence, R.I.	19.0	....	1.0	....
Augusta, Me.	21.0	....	3.0	16.0
Manchester, N. H.	20.0	....	2.0	16.0
Burlington, Vt.	20.0	....	2.0	16.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
*New Orleans	16.5	19.5	3.0	13.5
Alexandria	16.0	19.0	2.0	14.5
Baton Rouge	15.0	18.0	2.0	13.0
LaFayette	16.0	19.0	2.0	14.0
Lake Charles	16.5	19.5	2.0	14.5
Shreveport, La.	15.0	18.0	2.0	13.5
Memphis, Tenn.	16.5	19.5	3.0	15.5
Chattanooga	17.0	20.0	3.0	16.0
Knoxville	18.0	21.0	3.0	16.5
Nashville	17.0	20.0	3.0	16.0
Bristol	18.5	21.5	3.0	16.0
Little Rock, Ark	18.0	21.0	4.0	14.5

*Tax of 3 cents includes city tax of 1 cent.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
San Francisco	16.0	20.0	2.0	15.5
Los Angeles	14.5	18.5	2.0	15.5
Fresno	16.5	20.5	2.0	17.5
Reno, Nev.	21.5	25.5	4.0	19.0
Portland, Ore.	17.0	21.0	3.0	16.5
Seattle, Wash.	16.0	20.0	2.0	16.5
Spokane	20.0	24.0	2.0	20.5
Tacoma	16.0	20.0	2.0	16.5
Phoenix, Ariz	23.0	26.0	3.0	21.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank Wagon	Service station	Incids tax of	Kero. Tank wagon
Omaha	18.25	20.25	2.0	12.5
Crawford	20.0	....	2.0	13.25
McCook	20.75	22.75	2.0	14.0
Norfolk	19.75	21.75	2.0	13.0
North Platte	20.75	22.75	2.0	13.75
Scottsbluff	20.25	22.25	2.0	13.25

TANK WAGON PRICE CHANGES

February 6.—Standard Oil Co. of Indiana advanced tank wagon and service station prices of gasoline at Huron, S. Dak., 1 cent.

February 9.—Continental Oil Co. advanced tank wagon and service station prices of gasoline 1 cent at Boise, Idaho, and a half cent at Salt Lake City, Utah. Standard Oil Co. of New York advanced kerosene 1 cent. Magnolia Petroleum Co. advanced tank wagon and service station prices of gasoline generally 1 cent except at Tulsa where the tank wagon was advanced 2 cents and the service station unchanged. Magnolia Petroleum Co. advanced kerosene 1 cent except at Houston, El Paso, Oklahoma City, Tulsa and Texarkana.

February 11.—Continental Oil Co. reduced tank wagon and service station prices of gasoline 1 cent at Pueblo, Colo.

February 12.—Atlantic Refining Co. advanced kerosene 1 cent, Magnolia Petroleum Co. reduced gasoline 1 cent in Texas and advanced kerosene a half cent at Texarkana.

February 13.—Standard Oil Co. of New Jersey advanced tank wagon and service station prices of gasoline 1 cent throughout its territory. Standard Oil Co. of New York advanced gasoline 1 cent.

February 15.—Standard Oil Co. of Kentucky advanced tank wagon and service station prices of gasoline 1 cent throughout its territory except at points where abnormal prices exist.

CRUDE PRICE CHANGES

Tuxpam and Panuco, Mexico, crude at New York advanced 10 cents in this issue of The Oil and Gas Journal. These prices are based on contracts and there is no definte data of change.

February 1.—Kay County Gas Co., purchasing subsidiary of the Marland interests, posted a new schedule for oil produced in the Panhandle area of Texas, increasing prices 10 cents on crude below 31 gravity and 31 to 33.9 gravity, and 15 cents on crude 34 to 36.9 gravity, 37 to 39.9 gravity and 40 gravity and above.

February 13.—Joseph Seep Purchasing Agency advanced Pennsylvania grade oil in New York Transit Lines, Bradford district oil in National Transit Lines, Pennsylvania grade oil in National Transit Lines, Pennsylvania grade oil in southwest Pennsylvania Lines and Pennsylvania grade oil in Eureka lines, 25 cents; Pennsylvania grade oil in Buckeye Pipe Lines, 35 cents, and Cabell, Somerset medium and Somerset light, 10 cents.

February 15.—Joseph Seep Purchasing Agency posted a price of $2.45 for new crude found at Keister, south of Grove City, Butler County, Pennsylvania.

CRUDE OIL PRICES

(Continued from Page 227)

Plymouth	1.65
Waterloo	1.10
Oil Springs, Canada	2.70
Petrolia, Canada	2.63
*Western Kentucky, 36° and above	2.05
*Western Kentucky, 35° to 35.9°	1.95
Western Kentucky, 32.9 and below	1.85
Cumberland, Barren and Monroe Counties (Kentucky), (Paragon Development Co.)	2.45

*Prices for Warren, Allen, Hancock, Simpson and Ohio Counties by Indian Refining Co.

Mexican Crude

*Tuxpam light (f.o.b. Mex. ports)	1.35
‡Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.05
Panuco (New York)	1.70

*Plus 30.33c tax. ‡16.93c tax.

CALIFORNIA PRICES

Gravity	Long Beach	Richfield Huntington Beach Brea-Olinda	Rosecrans Dom'guez	Torrance Inglew'd	Whittier La Habra Montebello	Coyote	Santa Fe	Kern River Newhall McKittr'k	Midway-Sunset Elk Hills	Lost Hills Belridge	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	$ .85	$ .85	....	$ .85	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .75	$ .85
15°	.87	.87	....	.87	.85	.85	....	.75	.75	.75	.75	.75	.85
16°	.90	.90	....	.90	.85	.85	....	.75	.75	.75	.75	.75	.85
17°	.94	.94	....	.94	.85	.85	....	.75	.75	.75	.75	.75	.85
18°	.98	.98	....	.98	.85	.85	....	.75	.75	.75	.76	.76	.85
19°	1.02	10.2	....	1.02	.85	.85	....	.75	.75	.75	.75	.75	.85
20°	1.06	1.06	....	1.06	.87	.85	....	....	.79	.79	.79	.78	.89
21°	1.10	1.10	....	1.10	.89	.94	....	....	.84	.84	.84	.81	.93
22°	1.14	1.14	....	1.14	.91	1.00	....	....	.92	.92	.89	.84	.98
23°	1.18	1.18	....	1.18	.94	1.06	....	....	1.00	1.00	.94	.87	1.03
24°	1.22	1.22	....	1.22	.97	1.12	.97	....	1.08	1.08	.99	.90	1.08
25°	1.26	1.26	....	1.26	1.00	1.18	1.05	....	1.16	1.16	1.04	.93	1.13
26°	1.30	1.30	$1.30	1.30	1.03	1.24	1.13	....	1.24	1.24	1.09	.96	1.18
27°	1.34	1.34	1.34	1.34	1.06	1.30	1.21	....	1.32	1.32	1.14	.99	1.23
28°	1.38	1.38	1.38	1.38	1.09	1.36	1.28	....	1.40	1.40	1.19	....	1.28
29°	1.42	1.42	1.42	....	1.12	1.42	1.34	....	1.48	1.48	1.24	....	1.33
30°	1.46	1.46	1.46	....	1.15	1.48	1.40	....	1.56	1.56	1.29	....	1.38
31°	1.52	....	1.52	....	....	....	1.46	....	1.64	1.64	1.34	....	1.43
32°	....	....	1.58	....	....	....	1.52	....	1.72	1.72	1.39	....	1.47
33°	....	....	1.64	....	....	....	1.60	....	1.80	1.80	1.44	....	1.51
34°	....	....	1.70	....	....	....	1.68	....	....	1.88	1.49	....	1.55
35°	....	....	1.76	....	....	....	1.76	....	....	....	1.54	....	1.60
36°	....	....	1.84	....	....	....	1.84	....	....	....	....	....	....
37°	....	....	1.92	....	....	....	1.92	....	....	....	....	....	....
38°	....	....	2.00	....	....	....	2.00	....	....	....	....	....	....
39°	....	....	2.08	....	....	....	....	....	....	....	....	....	....
40°	....	....	2.16	....	....	....	....	....	....	....	....	....	....
41°	....	....	2.24	....	....	....	....	....	....	....	....	....	....
42°	....	....	2.32	....	....	....	....	....	....	....	....	....	....

SINCLAIR OILS

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Oil Securities React on Profit Taking

Active but Weak With Decline of From Three to Five Points on Leading Issues. Position Largely Technical

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Feb. 15.—Oil securities were active and weak as a result of heavy profit taking, declines of 3 to 5 points being registered in the leading issues. The general opinion was that the reaction was largely technical.

A special meeting of stockholders of the Standard Oil Co. of California, called upon to pass on the proposal to consolidate their company and the Pacific Oil Co., on February 10, adopted a resolution authorizing the sale, assignment and transfer and conveyance of the assets of the corporation to the Standard Oil Co. of California, a new company incorporated under the laws of Delaware.

Of the total 9,516,434 shares of stock outstanding, 7,677,057 shares were voted in favor of the proposal and 10 shares against it. The affirmative vote represents 80.67 per cent of the total outstanding shares. Ratification required a two-thirds vote. More than 63 per cent of the total number of stockholders were represented by proxy or by their presence.

President Kingsbury announced that as soon as possible after consolidation shall have been effected the stockholders of the present Standard Oil Co. of California will receive share for share in the Standard Oil Co. of California.

Mexican-Panuco Oil

Directors of Mexican Panuco Oil Co. have ratified acquisition of a concession in Venezuela comprising 1,150,000 acres. Negotiations are under way for acquisition of additional acreage in Venezuela.

Panhandle and Gibson

Stock of Panhandle Producing & Refining Co. soared to 8 under rather heavy trading. Gibson Oil was also strong, selling around 6. Both of these companies have considerable acreage in the Texas Panhandle Field.

Humble Oil

The annual meeting of the Humble Oil & Refining Co. has been adjourned to March 1, when a plan will be submitted to stockholders to increase the capital stock by 1,250,000 shares, making the total authorized stock 3,000,000 shares of $25 par value. Of the new issue approximately 83,000 shares will be reserved for sale to employes, while the remainder will be sold to stockholders at par in the ratio of approximately two new shares for every three held.

Net earnings of Humble Oil & Refining for 1925 before taxes and dividends are estimated at $22,000,000, compared with $10,835,194 in 1924. Company's crude oil output in 1925 was 22,500,000 bbls. against 19,500,000 bbls. in 1924.

Standard Oil of California

There is considerable speculation as to what dividend rate will be inaugurated on the stock of the new Standard Oil Co. of California. In some quarters the rate of $3 a share annually is expected.

Phillips Earnings

Earnings of Phillips Petroleum Co. for 1925 after all charges are estimated at $20,000,000.

Marland Oil

The report of Marland Oil Co. and subsidiaries for the year ended December 31, 1925, shows net income of $14,799,069 after interest, depreciation, depletion, Federal taxes, etc., equivalent to $8.38 a share earned on 1,764,000 average number of no par value shares outstanding during the year. This compares with net income of $354,305 in 1924, or 22 cents a share, on 1,549,961 shares outstanding at the close of that year.

The consolidated income account for 1925 compares with 1924 as follows:

	1925	1924
Gross	$64,718,281	$33,205,450
Op. expenses, etc.	48,607,235	27,952,940
Net	$16,111,046	$ 5,252,510
Other income	8,512,684	4,005,507
Total income	$24,623,730	$ 9,258,017
Interest, etc	974,283	1,148,574
Invent. adjust.	.....	1,077,166
Depr. and depl.	7,414,456	5,510,071
Federal taxes	875,000	.....
Other charges	*560,922	1,167,901
Net income	$14,799,069	$ 354,305
Dividends	4,579,874	.....
Surplus	$10,219,195	$ 354,305

*Includes $390,136 discount and premium on bonds retired and $170,786 investments charged off.

The consolidated balance sheet of the Marland Oil Co. and subsidiaries, as of December 31, 1925, compares as follows:

Assets	1925	1924
Property acct.*	$41,109,419	$35,244,873
Leaseholds	16,709,176	22,011,248
Invest. and advances	12,439,619	11,200,351
Unadjusted debits	1,432,958	2,038,622
Cash	3,999,108	3,444,783
U. S. Treasury ctfs.	1,000,000	.....
Bills receivable	374,298	239,902
Accts. receivable	5,214,325	5,855,528
Crude oil	4,573,817	8,491,165
Refined products	3,970,655	3,604,934
Materials and supplies	1,764,673	1,569,818
Accrued int. received	24,991	9,222
Misc. demand items	189,390	159,497
Total	$92,802,428	$93,869,943
Liabilities		
Cap. stock, surplus	$88,897,186	$70,526,235
Gold notes	.....	20,000,000
Equip. trust ctfs.	.....	521,000
Minority int.	120,306	178,213
Fed. tax reserve	875,000	.....
Accts. payable	2,634,886	2,344,292
Accts. accrued	275,050	300,203
Total	$92,802,428	$93,869,943

*After depreciation and depletion. †Represented by 1,895,103 no par value shares.

"The facilities of the company for handling its business in 1926," President Marland states, "have been increased by the expenditure of $14,982,704 on additions to property in 1925. This expenditure is reflected on your balance sheet by net increase in property account of only $562,472. The company increased its undeveloped acreage holdings from 665,839 to 1,032,959 acres. It increased its proven acreage and the number of producing wells and very largely increased its proven reserves of unmined oil."

Union Oil of California

The report of the Union Oil Co. of California for the year ended December 31, 1925, shows net profit of $10,513,206 after interest, Federal taxes, depreciation and depletion, equivalent to $2,78 a share (par $25) earned on $94,506,225 capital stock. This compares with $10,704,048, or $2.83 a share, on $94,500,000 capital stock in 1924.

The consolidated income account of the Union Oil Co. of California and subsidiary companies for 1925 compares as follows:

	1925	1924
Sales	.....	$65,950,218
Profit	$27,082,278	27,334,031
Ex. taxes, etc.*	4,392,098	4,415,711
Net earnings	$22,690,180	$22,918,320
Interest	736,649	904,860
Depr., depl., etc.	11,440,325	11,309,412
Net profits	$10,513,206	$10,704,048

*Includes Federal taxes.

The consolidated balance sheet of the Union Oil Co. of California and owned companies, as of December 31, 1925, compares as follows:

Assets	1925	1924
Property*	$102,815,252	$105,499,111
Investments, etc.	997,925	1,046,886
U. S. securities	7,000,000	5,500,000
Cash, etc.	6,893,349	4,733,090
Bills & accts. recv.	7,002,563	6,945,341
Earn. stocks subsid.	579,003	.....
Inventories	33,527,098	30,830,344
Defd. charges	598,175	658,633
Total	$159,413,365	$155,213,405
Liabilities		
Capital stock	$ 94,506,225	$ 94,500,000
Bonds	24,100,500	21,072,902
Subsid. cap. stock	495,822	.....
Emp. stk. subscript.	514,225	.....
Accts. payable	4,677,317	5,973,855
Accrued interest	353,424	305,684
Tax reserves, etc.	2,066,250	2,976,992
Surplus	†31,699,602	30,383,971
Total	$159,413,365	$155,213,405

*Less depreciation and depletion. †Includes $15,334,455 appreciation of new discovery areas.

R. R. GOVIN DIES ABROAD

WASHINGTON, D. C., Feb. 16.—Rafael R. Govin, president of the New York Journal of Commerce Co. and head of the United States Asphalt & Refining Co. of New York and a former resident of Washington, died Sunday in Monte Carlo, Monaco, according to a cablegram received. Mr. Govin formerly was president of the Interocean Oil Co. his death was from heart disease.

TANKS FOR HUTCHINSON COUNTY

Six 55,000-bbl. steel tanks are to be installed in the oil field of Hutchinson County, Texas, by the Kay County Gas Co., a subsidiary of the Marland Oil Co. The Kay County Co. recently entered the Texas Panhandle as a buyer of crude oil. Ten miles of the bed of the Canadian River in Hutchinson County, embracing 2,080 acres, has been leased by the Marland Oil Co. It is said the consideration was $80,000, of which $28,500 was paid in cash and the balance to be paid in oil.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Feb. 15	Clos. Quot. Feb. 8	1925 High	1925 Low	1924 High	1924 Low	1923 High	1923 Low
American Republics	..	*70	*70	79¾	48	48	25	..	..
Associated Oil	25	58⅛	58⅛	47¼	32	34⅝	27⅝	29¼	29⅛
Atlantic Ref., com.	100	104¼	106¾	117⅛	95¼	140⅛	73⅛	100	98¾
Barnsdall "A"	25	30¼	31	33⅛	18¾	29⅛	14	37	9¾
California Pet., com.	25	36⅝	36⅝	34⅝	23⅞	29	19⅞	28⅛	17⅛
General Petroleum	25	54⅞	57⅞	59	42	45	38⅝	..	..
Houston Oil	100	66⅛	67⅛	85	59	82⅛	61	78	40¾
Independent Oil & Gas	..	28¼	30¼	41¾	13⅛	16¼	8¾	11¼	3⅝
Indian Refining	10	12¼	11⅝	14¼	5⅛	7	3⅝	8⅛	4
Louisiana Oil	10	16⅛	17¼	23⅝	13¼	..	..	..	..
Maracaibo	..	24	25¼	35½	20⅜	37¼	25⅝	28¼	16
Marland	..	57⅜	58⅝	60¼	32⅝	42	28	50⅝	18½
Mexican Seaboard	..	9⅝	9⅞	22½	9	25⅜	14½	19⅜	5⅜
Mid-Continent Pet.	..	34	34⅞	38	25⅜	40¼	22⅝	62¼	22⅜
National Supply	50	59⅛	59⅛	71	54⅜	12⅛	54	68	54
Oil Well Supply	25	33¼	34⅜	38	33⅜	..	..	..	..
Pacific Oil	..	82	81½	78½	51⅛	58¼	45	52⅜	31½
Pan Amer. P. & T., com.	50	65½	68⅛	83⅞	59½	65	44⅛	83½	53
Pan Amer., Western B.	..	41½	43	49⅝	37¼	..	..	..	..
Phillips Pet.	..	46½	45⅝	47⅛	36¼	42¼	28½	69⅝	19⅜
Producers & Refiners	50	14⅜	15	32⅝	12½	43½	29⅜	58¼	17½
Pure Oil, com.	..	29	30	33⅜	25⅛	30¼	20	32	16¼
Royal Dutch, N. Y., sh.	13.40	53¼	54⅛	57⅜	48¼	59½	40⅝	55⅛	40½
Shell Transport	10	*44¼	*46	49	39⅜	42	33	41¼	29½
Shell Union, com.	..	26⅜	27⅝	28⅝	21⅝	22½	15⅜	19¼	12⅜
Simms Pet.	10	26½	25⅝	28½	17⅜	24	10⅜	16⅜	6½
Sinclair Consolidated, com.	..	23¼	23⅛	24⅞	17	17⅛	15	39⅝	16
Skelly Oil	25	30⅝	31½	32½	21⅜	29	17⅛	35	12½
Standard of California	25	58⅜	58⅜	67¼	51½	68½	55½	64½	47¼
Standard of New Jersey, com.	25	44	45	47⅛	38⅝	41½	33	44¼	30⅝
Sun Oil Co.	..	*38½	39½	43⅞	38½	..	..	..	..
The Texas Co.	25	52⅝	52⅝	55	42⅜	45⅝	37⅜	52⅝	45⅝
Texas Pacific Coal & Oil	10	16¼	17	23⅝	11	15¼	8½	23⅝	5⅝
Tide Water Oil (new)	..	35⅜	37	‡153	122	151	116½	144	94
Transcontinental	..	4	4⅛	5⅜	3⅛	6⅛	3⅜	14⅛	1⅛
Union Oil of California	25	40⅝	43½	43⅝	33⅛	39	35½	..	..
Union Tank, com.	100	*89	92	‡134	118	132⅞	94	114	106
White Eagle Oil & Ref.	..	28	28½	31⅝	26⅝	29⅝	23⅛	30⅝	29⅛
Standard Oils									
Anglo-American Oil	£1	18	18	26⅜	17½	18⅜	14⅝	19⅜	13½
Borne Scrymser	100	*220	*225	240	205	264	150	153	210
Buckeye Pipe Line	50	58	57⅝	72	53½	85⅛	51	94	57½
Chesebrough Mfg. Co.	25	69	*68	74	48¼	52⅛	39¼	340	205
Continental	10	23	23⅞	31⅛	21⅝	..	..	..	..
Crescent Pipe Line	25	*15⅛	*15⅛	17½	10	20	11¼	25	15
Cumberland Pipe Line	100	*133⅛	*132	156	128	148	108	117	80
Eureka Pipe Line	100	*58	*60	96	61¼	105	74	117¼	87
Galena Signal, com.	100	*30	30⅛	68½	23⅛	69⅜	52½	78	55
Humble Oil & Refining Co.	25	89⅜	92	99	42⅛	43⅜	36	41	28⅛
Illinois Pipe Line	100	134½	136	154½	124	161	123	171	116
Imperial Oil (Ltd.)	..	36	36⅝	39¼	27¼	119	99	123	92
Indiana Pipe Line	50	65	62⅛	84	57⅜	100	66	103	81
International Pet. Co.	10	33	34⅛	35⅝	22⅛	24⅜	16⅜	24⅜	13¼
National Transit Co.	12.50	19½	19⅜	25⅛	16½	25⅞	20⅝	20	19½
New York Transit	100	*42	42	79	50	97	54½	138	70
Northern Pipe Line	100	78½	*70½	88	67½	107½	72	111	96
Ohio Oil Co.	25	64⅝	65	75½	60	79½	53	85⅝	48⅝
Penn.-Mex. Fuel	25	*18	19	44	19	35⅝	27	45	10½
Prairie Oil & Gas	25	56¼	57	65½	45⅞	269	193	272	152
Prairie Pipe Line	100	124⅜	126	129⅜	105	111	100	117	93
Solar Refining Co.	100	205	205	259	200	240	170	212	161
South Penn Oil	25	175½	176	‡197	139	176	117	196	100
Southwest Pa. Line	100	52⅛	*53	84	50	89	68	89	66
Southern Pipe Line	100	62⅛	63	103	63	100	80½	116	87
Standard of Indiana	10	65½	67¼	70⅜	59½	69⅜	54¼	69⅞	48½
Standard of Kansas	25	32	33¼	46	30¼	50½	32½	56¼	36½
Standard of Kentucky	25	125½	125⅜	137	114⅜	121⅞	101	109½	76
Standard of Nebraska	100	248	248	270	251	262	198	280	186
Standard of New York	25	35⅜	36	48⅝	40	48	37⅜	49⅝	35½
Standard of Ohio, com.	100	347½	350	369	338	337½	277	320	270
Swan & Finch, com.	25	*19	*20	27	12	28	20	..	..
Vacuum Oil	25	103	104	109½	80½	83½	50½	55½	40
Miscellaneous									
Gulf Oil Corp. of Pa.	25	88	89	98¼	63½	67⅝	56	68¼	45⅝

*Bid, no sales. ‡Old stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Feb. 15	57.51	Jan. 11	57.55	Dec. 7	57.99
Feb. 8	58.96	Jan. 4	59.15	Nov. 30	56.93
Feb. 1	58.51	Dec. 28	59.40	Nov. 23	56.49
Jan. 25	57.96	Dec. 21	56.86	Nov. 16	57.31
Jan. 18	57.38	Dec. 14	56.89	Nov. 9	56.47

NORTH CENTRAL TEXAS

(Continued from Page 58)

Oldhom, 30 bbls. at 1,353 feet; No. 2 Abercrombie, dry at 1,575 feet.

Young County

Bridwell and others' No. 1 Street, 25 bbls. at 1,286 feet; Everts and others' No. 1 Campbell, dry at 1,430 feet; Murchison and others' No. 1-F Campbell, dry at 1,050 feet; Green and others' No. 1-B Wilborn, dry at 1,430 feet; Nash and others' No. 4 Williams, 75 bbls. at 2,460 feet; Nine Hundred Oil Co.'s No. 6 Benson, dry at 950 feet; Texas Pacific Coal & Oil Co.'s No. 2 Kimkel, 15 bbls. of water and 10 bbls. of oil at 1,196 feet; Tidal Oil Co.'s No. 18 Campbell, 55 bbls. at 919 feet.

Stephens County

Prairie Oil & Gas Co.'s No. 1 Donnell, 80 bbls. at 3,181 feet; Rhodes and others' No. 1 Langford, 3,000,000 feet of gas at 3,140 feet; Hickok P. & D. Co.'s No. 1 Parks, 15 bbls. at 3,158 feet; Roth and others' No. 1 Suddeth, 10 bbls. at 3,738 feet; Texas Pacific Coal & Oil Co.'s No. 58 Binney, 25 bbls. at 1,895 feet.

Eastland County

Teatsworth and others' No. 8 Scott, 160 bbls. at 1,503 feet; Hickok P. & D. Co.'s No. 1 Kimbrough, 5,000,000 feet of gas at 3,174 feet.

Brown County

Hill and others' No. 1 Newton, 25 bbls. at 1,206 feet; Huffman and others' No. 1 Kilgore, 15 bbls. at 1,291 feet; Lowe and others' No. 1 Everage, dry at 1,210 feet; McCarter and others' No. 2 Prather, dry at 1,350 feet.

Reagan County

Big Lake Oil Co.'s No. 55 University, 615 bbls. at 2,979 feet; Texon Oil & Land Co.'s No. 37 Group 1 University, 45 bbls. at 3,091 feet.

Throckmorton County

Pandem Oil Corp.'s No. 2-A Portwood, dry at 1,450 feet; No. 1-B Portwood, dry at 1,512 feet; Larkin and others' No. 1 Richards, dry at 4,280 feet.

Callahan County

Conway and others' No. 1 Thron, dry at 1,370 feet; Fain and others' No. 1 Block 65, dry at 1,200 feet.

Hutchinson County

Centerfield Oil Co.'s No. 1 Smith, 25 bbls. at 2,880 feet.

Baylor County

Magnolia Petroleum Co.'s No. 3 Portwood, 15 bbls. at 1,426 feet; Waite Phillips and others' No. 1 Schramm, dry at 1,628 feet.

Jack County

Buttram Petroleum Co.'s No. 1 Preston, 75 bbls. at 2,075 feet.

Shackelford County

Phillips Petroleum Co.'s No. 1 Fry, dry at 3,959 feet.

Culberson County

California Co.'s No. 1 Gresham, dry at 4,010 feet.

Coleman County

Gwinnup and others' No. 1 Dibrell, 100 bbls. at 1,881 feet.

Young County Drilling

Camp Oil & Gas Co.'s No. 1 Campbell, drilling at 150 feet; Carter and others' No. 1 Benson, 415 feet; Clark and others' No. 4 Bishop, 200 feet; Daniels and others' No. 1 Hayley, 300 feet; Kay and others' No. 1 Eichelberger, spudding a new hole; Tidal Oil Co.'s No. 20 Campbell, drilling at 430 feet; Underwood Drilling Co.'s No. 1 Benson, 425 feet; White and others' No. 1 Graham, 150 feet.

Stephens County

Christie Brothers' No. 2 Gardenhire, is spudding; Clark and others' No. 2 Litton, spudding; No. 3 Sikes, drilling at 500 feet; Texas Pacific Coal & Oil Co.'s No. 62 Binney, is spudding; Morrison and others' No. 1 Burk, underreaming; Roney and others' No. 1 Overall, drilling at 700 feet; Ross and others' No. 1 Haygood, 710 feet.

Brown County

Carter and others' No. 1 Stapp, drilling at 300 feet; Conway Brothers' No. 4 Chambers, 500 feet; No. 3 Pickett, 400 feet; Cosden and others' No. 5 Westerman, 325 feet; Curry and others' No. 1 Stone, 380 feet; Eastland Oil Co.'s No. 2 Stone, 540 feet; Gillespie and others' No. 1 Newton, showing oil at 1,332 feet; Gillett and others' No. 6 Prather, drilling at 400 feet; Haggard and others' No. 2 McDonough, 300 feet; Humble Oil & Refining Co.'s No. 1 Hodnett, 125 feet; No. 1 Kilgore, 240 feet; Hutton and others' No. 1 Mauldin, 270 feet; McLester Oil Co.'s No. 2 Woolridge, spudding; Mahlstedt Oil Co.'s No. 1 Eldington, drilling at 360 feet; Mount and others' No. 1 Gaines, showing oil at 1,336 feet; Mulloy and others' No. 5 Prather, drilling at 400 feet; Mulloy and others' No. 6 Prather, 420 feet; Schaffner and others' No. 7 Prather, spudding; Shadbolt and others' No. 1 Lewis, drilling at 590 feet; Slick and others' No. 3 Starr, 595 feet; Suddereth and others' No. 2 Byrd, spudding; Williamson and others' No. 1 Keller, drilling at 620 feet; Lewis and others' No. 1 Ward, 600 feet; Treat and Co.'s No. 1 Anderson, 480 feet.

Reagan County

Big Lake Oil Co.'s No. 51 University, fishing at 2,485 feet; No. 52, drilling at 2,930 feet; No. 53, 3,029 feet; No. 56, 1,100 feet; No. 58, 2,470 feet; No. 59, 2,636 feet; No. 60, fishing at 2,445 feet; No. 61, is drilling at 2,395 feet; No. 62, 2,445 feet; No. 20-A, cleaning out at 2,455 feet; No. 25-A, cleaning out at 2,480 feet; No. 37-A, setting casing at 2,398 feet; Milham Oil Corp.'s No. 1, drilling at 2,410 feet; Peer Oil Corp.'s No. 1 Sawyer, underreaming; Texon Oil & Land Co.'s No. 1-B, spudding.

Upton County

Dixie Oil Co.'s No. 1 Hobbs, drilling at 700 feet; The Texas Co.'s No. 12 Curry, is drilling at 725 feet.

Eastland County

Labough and others' No. 1 Casey, is drilling at 500 feet; Robert Oil Co.'s No. 1 Wood, 560 feet; Texas Pacific Coal & Oil Co.'s No. 1 Pease, 250 feet; Hart Brothers' No. 1 Johnson, 300 feet; Johnson and others' No. 1 Smith, is underreaming; Root and others' No. 1 Strickland, is spudding new hole; Simon and others' No. 1 Morgan, drilling at 300 feet.

Callahan County

Adams and others' No. 1 Windham, drilling at 720 feet; French and others' No. 1 Maddux, 890 feet; French and others' No. 1 Yost, spudding; Kirk and others' No. 1 Harlow, drilling at 780 feet; McCamey and others' No. 1, Block 9, 400 feet; Moutray Oil Co.'s No. 2 Finley, 680 feet; The Texas Co.'s No. 1 Legett, 370 feet.

Coleman County

Gwinnup and others' No. 1 Casey, drilling at 400 feet; Mahlstedt Oil Co.'s No. 1 Atkinson is underreaming; Marton and others' No. 1 Morris, 300 feet; Owen and others' No. 1 Baker, 500 feet; McKinzie and others' No. 1 Pitty, 300 feet; Hutts and others' No. 1 Holff, 370 feet; Independent Oil & Gas Co.'s No. 1 Burleson, showing oil at 2,194 feet; Zack and others' No. 1 Ruhmann, spudding.

Crane County

Church and others' No. 1 University, drilling at 764 feet; Marland Oil Co.'s No. 1 Cowden, spudding.

Ward County

Chesepeake Oil Co.'s No. 1 Marston, spudding.

Reeves County

Schooler and others' No. 1 Abrams, underreaming.

Jeff Davis County

Herbert Oil Co.'s No. 1 Wings, underreaming.

Pecos County

Tom Adams Oil Co.'s No. 1 Gray, cleaning out at 1,127 feet.

Crockett County

Cosden and others' No. 1 Noelke, is drilling at 1,650 feet; Crockett Drilling Syndicate's No. 2 Shannon, 1,710 feet; Humble Oil & Refining Co.'s No. 1 Sond, 2,550 feet; Humphrey Oil Co.'s No. 1 University, fishing at 2,375 feet; Magnolia Petroleum Co.'s No. 1 Shannon, drilling at 1,260 feet; Republic Production Co.'s No. 1 Todd, fishing at 2,270 feet.

Presido County

Headlock and others' No. 1 Toole, drilling at 1,910 feet.

Mitchell County

Eastland Oil Co.'s No. 1 Handley, is spudding; Magnolia Petroleum Co.'s No. 3 Adams, drilling at 320 feet.

Howard County

Owens and others' No. 1 Scott, 770 feet.

Culberson County

Gresham Brothers' No. 1 fee, cleaning out at 3,370 feet; Pure Oil Co.'s No. 1 Quaid, cleaning out at 1,900 feet.

Loving County

Rio Grande Oil Co.'s No. 1 Johnson, bailing at 3,218 feet.

Glasscock County

Case and others' No. 1 Sparkman, fishing at 2,020 feet.

Sterling County

Co-Operative Lease & Development Co.'s No. 1 Dauthit, cleaning out at 1,650 feet; Rummel and others' No. 2 Clark, drilling at 450 feet.

Comanche County

Brown Drilling Co.'s No. 1 Evans, drilling at 700 feet; Milham Oil Corp.'s No. 1 Powers, spudding.

Tom Green County

Church and others' No. 1 Williams, drilling at 1,440 feet; Roxana Petroleum Corp.'s No. 1 Clark, is drilling at 1,375 feet.

Irion County

Oklavania Oil Co.'s No. 1 Sawyer, underreaming.

SOFTER TONE DEVELOPS IN REFINED MARKETS

(Continued from Page 30)

were made at one time. On the other hand, the 64-66 375 gasoline Tuesday was slightly lower than it was a week ago, being moved from 12¾ to 13 cents, and the 60-62 400 grade at 11¾ to 12 cents.

The export purchase kept these higher gravity gasolines from weakening as much as the U. S. Motor (58-60 437) product, which in some cases was offered as low as 9⅞ cents. These low quotations, however, were from marketers who had bought long. Refiners reported getting some business from 10¼ to 10½ cents, and were reluctant to lower quotations. Some refiners still maintained their quotations at 10¾ cents. Despite the low prices, buying was quiet. Other grades of gasolines were comparatively inactive with quotations slightly lower than a week ago.

Natural Gasolines and Blends

Although firm the greater part of the past week as a result of some increased buying, natural gasolines Monday and Tuesday were weakening again in line with other refined products. The buying caused slightly higher prices on some grades of naturals but Tuesday Grade C was available at 8¼ to 8½ cents, Grade B at 9 to 9¼ cents and Grade A at 10 cents, with the double grades at slightly lower markets. Blends also were quiet with moving prices somewhat lower.

Kerosene and Distillate

Kerosene was practically unobtainable the past week and as a result continued as one of the really strong products in the entire market. Refiners quoted 6¾ cents and up for 41-43 water white in the majority of cases had none to sell. The 42-44 water white grade was sought at 6⅞ to 7 cents. Distillates were unchanged in price during the week with the 38-40 grade at 3⅞ to 4 cents and the 36-38 grade at 3¾ to 3⅞ cents.

Fuel Oil and Gas Oil

Fuel oil and gas oil were virtually unchanged. The sluggish movement of fuel continued despite cold weather in most parts of the country but this indicated that there was plenty of the product already bought to supply consumption now without calling on Oklahoma refiners. Nevertheless, in the face of lack of activity and the settlement of the coal strike refiners were able to hold the market prices at last week's figures.

While the gas oil market continued fairly firm, indications of expected weakness were given in offerings at lower prices for the delivery the remainder of the month. Gas oil was quoted Tuesday at 3¾ to 3⅞ cents.

Lubricants and wax also were unchanged during the week, both as to prices and the general situation. The lower viscosity lubricating oils continued in greater demand than the higher grades.

Petroleum Division, A. I. M. E., Discusses Phases of Industry

Presenting symposiums on production engineering, production, refining, transportation and economics, the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, held its sessions in connection with the annual meeting of the institute in New York, February 15, 16 and 17. Emphasis was placed on economic phases of engineering and scientific progress not only in production but in refining and transportation. F. Julius Fohs, chairman of the division, in arranging the program contemplated a comprehensive scope fully carried out by the papers which also yielded some valuable unpublished detailed data.

E. L. DeGolyer, president of the Amerada Petroleum Corp., presented a paper on world production in 1925. Taxation was covered by A. D. Brokaw. Mr. Fohs spoke on technologic progress and Dr. Van H. Manning covered research.

The production engineering symposum embraced well spacing, core drilling by diamond drills, special type drills and basket cores, improvements in production methods in the Mid-Continent Field featured by a paper by H. B. Hill, of the Bureau of Mines, on increasing production by shooting and one by Joseph B. Umpleby, president Petroleum Reclamation Co., on water flooding.

The refinery symposium went into cracking processes probably more completely than has ever been done in a public meeting and took up other refining processes and also new gasolines and anti-knock compounds.

Charles L. Parmelee, engineer, presented a paper on the character of and principles involved in, cracking processes, followed by discussions of the principal refining processes by representatives of each. Arthur E. Wells, engineer, spoke on the comparative value as motor fuel of cracked versus straight run gasoline. Basic changes in refining processes was the subject of Walter Miller, of the Marland Oil Co., with special discussion on the main divisions of refining operations. Doctor Sparrow of the Bureau of Mines, spoke on new gasolines and anti-knock compounds and there was discussion by representatives of oil and automobile companies.

The transportation symposium covered transportation, evaporation losses in storage and transportation, breakage in crude oil pipe line transportation systems, and corrosion of pipe lines and protective coverings.

Considerable attention was given to petroleum statistics and economics. An interesting paper on the community lease and its economic aspects was read by Fay Wright, of the Superior Oil Co., of California.

PORTABLE PLANT SALES

The Southwestern Engineering Corp. of Los Angeles, Calif., manufacturer of oil field and mining equipment, recently opened a branch office in Tulsa, Okla., to take care of its business in the Mid-Continent fields. Eddie Carlton is in charge of the Oklahoma branch. This company reports the recent sale of three portable absorption plants to the Gypsy Oil Co. of Oklahoma; one to the Amerada Petroleum Corp., and one to the Globe Gasoline Co., also of Oklahoma.

GERMANY'S ROTARY WELL

The successful well No. 2 of the Krug von Nidda Co. in the Nienhagen Field of Hanover is the first borehole in Germany to be put down on the American rotary system. First oil was found at 600 metres.

POLAND'S OUTPUT FALLS

Polish petroleum production is declining sharply owing to the failure to develop profitable outlets as a substitute for the German market.

URGES REJUVENATION OF DEPLETED OIL FIELDS

(Continued from Page 214)

ing the development period of the field, more gas would be produced than needed, and this surplus could be marketed as the regulated conditions of development and operation would make safe the extensions of gas lines to the field.

But in addition to those gains from conserving gas and gasoline, holding up production and keeping down development expense, the restored pressure would aid greatly in reducing the expense of lifting the oil to the surface. By restoring the depleting pressures, the wells would flow longer and finally auxiliary gas lift devices could be applied, and in many fields, at least, it would never be necessary during the life of the pool to use a pump with its attendant installation and operating costs and trouble. Though gas and air lifts are now being employed occasionally, their usefulness covers but a few months period in the life of the well, for after a while, the pressure in the sand declines to a point below the pressure necessary to flow the oil to the surface, and then the air or gas goes back into the sand instead of lifting the oil. Experience in the Powell Field, Texas, illustrates this principle, but by maintaining the pressure in the sand artificially, air or gas lifts can be used indefinitely in many fields. My associates have over 1,500 air lifts of a special kind in operation on their wells near Marietta, Ohio, though these wells produce but a fraction of a barrel of oil daily, and some of the wells are 60 years old.

The additional profits possible from well regulated unit operations will, I believe, be much greater than appears at first thought. The costs can be reduced in so many ways, the recoveries of oil, gas and gasoline increased to such extent, and there are so many possible incidental gains that the cumulative effect should be to spread the margin between cost and gross income to a surprising degree. Doubling, trebling and even quadrupling net returns over those possible for independent operations can reasonably be hoped for.

At this time, such a program may still seem entirely visionary to most oil men. Heretofore, we have never dared advance it publicly for fear of harming our reputations as practical operators, yet we have received such encouragement from the successes in consolidating old properties, and we find so many influential oil men thinking ahead along similar lines, that it now seems possible for such a dream to be materialized before many years.

Frankly, we are unable to outline any detailed methods for consolidating new pools which offers any reasonable chance of acceptance at this time, except in pools owned by a few companies. Consolidation is particularly necessary in such a pool as Cromwell, yet it would be most difficult to solve because the chief problem is to establish equitable and acceptable values for the properties, and it would be difficult to place acceptable values on the gassy parts of the pool which have both utility and nuisance values.

Application of pressure to new pools is being tried out, and when results convince other operators that independence can be maintained only at exorbitant prices, means of getting together can be found. As a result of our experience and success in effecting consolidation in old fields, we believe that coercion on the part of the Government would be both unnecessary and hurtful. The industry has made a good start in solving the complex problem of consolidation and in creating a receptive atmosphere for the extension of the idea. We believe the industry should be permitted to follow up this early success and to work out its own salvation. My own experience of six years in government service in both technical and regulatory work has convinced me that a manner of operation cannot be successfully forced upon the oil man. He rightfully demands that no matter how attractive a proposal may be, convincing demonstrations be made before he be asked to adopt it. Such demonstrations will soon be made in pools where consolidations are or cannot be effected. Once convincing demonstrations have been made, the industry itself will work out its own salvation.

PRELIMINARY PETROLEUM STATISTICS FOR 1925

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bbls.; but those from other countries increased almost 100 per cent to a total of nearly 7,000,000 bbls. It is of interest that the 1925 imports from Mexico were less than half of what they were in 1922, when the peak was reached. Exports during the year amounted to 13,353,000 bbls., a material decrease from 1924.

Due to the fact that stocks of heavy crude and fuel oil are combined for California, consumption and stocks of either product can not be given for the entire United States, hence two divisions, "East of California" and "California," are recognized. Stocks of crude petroleum east of California at the beginning and end of the year 1925 amounted to 312,725,000 bbls. and 292,288,000 bbls. respectively, a decrease during the year of over 20,000,000 bbls. As shown on the graph for stocks, the decrease in these stocks was fairly steady during the year, except for a short period during the summer. On the other hand, stocks in California, particularly those of heavy crude, showed general increases. Stocks of refinable crude in this area rose during the year from 40,513,000 to 44,323,000 bbls.; and heavy crude (including fuel oil), from 55,964,000 to 81,806,000 bbls.

Shipments of California crude oil through the Panama Canal to Gulf and Atlantic coastal ports in the United States in 1925 amounted to 15,000,000 bbls. as contrasted with 40,000,000 bbls. in 1924. This very material drop resulted from a decline in California production, enabling the refineries of this State to care for most of its output, as well as the presence of conditions favorable to coastwise shipments from the Gulf to Atlantic ports.

Prices of crude petroleum rose during the first part of the year, remained fairly constant until late summer, when lower prices were posted which remained fairly constant for the rest of the year. The closing prices, however, were considerably higher than at the beginning. For example, Mid-Continent oil of gravity 33 degrees to 33.9 degrees was $1.10 on January 1, 1925, rose to $1.35 on January 22, to $1.55 on January 30, to $1.80 on February 12, but fell on August 27 to $1.55, which price remained through December 31. It is probable that the average annual price at the well of all grades for 1925 was in the neighborhood of $1.55, more than 20 cents above the 1924 price.

The Bureau of Mines' figures for number of oil wells producing December 31, 1925, are not yet available, but data compiled from The Oil and Gas Journal and bulletins of the American Petroleum Institute show 16,527 oil wells completed as compared with 14,587 in 1924. More wells were completed in June and July, 1925, than in any other month of 1925.

The year 1926 opened with great promise, which seems to be more justified than the customary optimism of years past. The problem of overproduction has been largely removed, stocks have been reduced, and prices have remained steady with the result that earnings for 1925 were generally higher than for some years past. The danger of overproduction through the stimulating action of recent price increases of crude oil and gasoline still exists, but the element of caution acquired from past experiences should act to prevent a repetition of chaotic conditions of 1923.

Refined Products

Crude oil runs to stills during 1925 amounted to 740,004,000 bbls., of which 41,338,000 bbls. was foreign crude oil. This is an increase over 1924 of 96,285,000 bbls., or 15 per cent. The production of gasoline during the year 1925 amounted to 10,886,127,000 gallons, a daily average of 29,825,000 gallons and an increase over 1924 of 1,926,447,000 gallons, or 21.5 per cent. This represents a recovery of 35 per cent from the total crude oil run to stills, which compares with 33 per cent in 1924. Production reached its maximum in August when 972,689,000 gallons was produced, a daily average of 31,377,000 gallons. Of the total production for the year 1,744,120,000 gallons, or 16.0 per cent, was produced on the East Coast, 1,765,883,000 gallons, on 16.2 per cent, in California, and 2,710,395,000 gallons, or 24.9 per cent, in the Mid-Continent Field. Consumption of gasoline for the year amounted to 9,362,094,000 gallons, a daily average of 25,650,000 gallons and an increase over 1924 of 1,591,856,000 gallons, or 20.5 per cent. Consumption was at its maximum in July, when the domestic demand was 963,071,000 gallons. Exports for the year amounted to 1,330,314,000 gallons, an increase over 1924 of 113,713,000 gallons, or 9 per cent. Stocks on hand at the beginning and end of the year were 1,294,472,000 and 1,648,328,000 gallons respectively, an increase during the year of 27 per cent.

The total production of gasoline by cracking during 1925 amounted to 2,880,476,000 gallons, or 26.5 per cent of the total production. There was a gradual increase in the use of cracking equipment, and the percentage from this source rose from 25 at the beginning of the year to 28 for the month of December.

Gasoline prices for 1925 were in general higher than for 1924, though the overproduction cycle was largely repeated, with prices falling when consumption was highest.

The production of kerosene during 1925 amounted to 2,510,334,000 gallons, a decline from 1924 production. Exports of this commodity were lower than in 1924 but domestic demand was higher due to increased use in domestic heaters and to the anthracite strike. Stocks at the end of the year amounted to 299,190,000 gallons, a decrease during the year of 62,000,000 gallons.

The production of gas and fuel oils was 15,279,072,000 gallons, an increase over 1924 of 1,819,103,000 gallons, or 13.5 per cent. Stocks for this commodity east of California increased during the year, though to a less extent than gasoline.

The production of lubricants during 1925 amounted to 1,301,016,000 gallons, an increase over 1924 of 146,089,000, or 13 per cent. Exports and domestic demand also were higher than for 1924 but stocks were increased 35,000,000 gallons during the year and amounted to 305,203,000 gallons December 31, 1925.

The production of wax in 1925 amounted to 590,576,000 pounds, of which 332,916,000 pounds, or 56 per cent, was exported. The production represents an increase of about 75,000,000 pounds over 1924, but the exports were a decrease of 50,000,000 pounds. The production both of coke and asphalt increased, the former largely as a result of greater use of cracking equipment.

The following conversion factors for wax, coke and asphalt, derived from reports received during 1925, are inserted for the information of those desiring to compute complete recovery from crude oil run, pending the publication of the final figures:

	Wax	Coke	Asphalt
East Coast	153,247	195,587	234,709
Appalachian	151,349	264,688	236,559
Indiana-Illinois ...	148,720	258,326	240,151
Oklahoma-Kansas.	151,930	259,202	243,073
Texas	141,871	185,751	235,806
Louisiana-Ark. ...	153,133	203,225	243,677
Rocky Mountain ..	153,884	282,352	228,912
California	148,837	.....	234,461
United States	151,124	224,185	236,474
Texas Gulf Coast..	141,315	179,322	235,827
La. Gulf Coast....	153,133	202,301	244,635

The number of refineries in the United States was reduced during the year 1925 from 541 to 509, due largely to the dismantling of many plants in the Mid-Continent Field. The capacity, however, rose from 2,828,000 bbls. per day at the beginning of the year to 2,853,000 bbls. at the end of the year, due mainly to the growth of the larger refineries. (Note—A list of petroleum refineries of the United States as of January 1, 1926, may be obtained on application to the Bureau of Mines.)

Natural-Gas Gasoline

The production of raw natural-gas gasoline in the United States during 1925, as compiled from monthly reports received from approximately 97 per cent of the total capacity, amounted to 1,104,900,000 gallons, an increase of 18 per cent over 1924. Stocks at the plants January 1, and December 31, 1925, amounted to 12,700,000 and 13,800,000 gallons respectively; hence, consumption for the year was 1,103,800,000 gallons. Exclusive of California, 36,904,000 gallons of the raw product was blended at the plants with 73,206,000 gallons of naphtha or other light oil.

The inauguration of monthly natural-gas gasoline reports made it possible for the first time to complete the total supply of motor fuel. If to the total production of refinery gasoline, minus that portion obtained from blending or running natural-gas gasoline to stills with crude, is added the total production of raw natural-gas gasoline at the plants plus the amount of benzol produced, the result will be very close to the total output of motor fuel for the country. This total for the year 1925 amounted to 11,239,900,000 gallons, a daily average of 30,800,000 gallons.

KANSAS

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NE, Section 25-23-8. Phillips Petroleum Co. is spudding No. 2 Moshy, C SE NE SE, Section 26-23-8. Nathan and Skelly Oil Co. have a dry hole at 2,843 feet in No. 1 Marsh, C NW NW SE, Section 32-23-8. Tom Conway's No. 1 Noller, C SW NE SW, Section 10-23-9, got sand at 2,382-2,412 feet, which was given two shots with only a small response in production. It is not a completion. Phillips Petroleum Co.'s No. 5 Bradford, SW cor. Section 15-23-9. Empire Gas & Fuel Co.'s No. 31 Teeter, NW cor. SE SE, Section 16-23-9, got sand at 2,421-76 feet. It was shot with 240 quarts and made 150 bbls. the first 24 hours. Phillips Petroleum Co.'s No. 7, C NW NW SW, Section 19-23-9, was good for 25 bbls. after a 120-quart shot at 2,575-2,663 feet. White Eagle Oil & Refining Co. and McGinnis have a 125-bbl. initial producer in No. 5 Morris, after an 80-quart shot in sand at 2,549-63 feet.

Selby Oil Co. has abandoned the location for a test on the Leedy farm, C NE NW SE, Section 26-22-9, following the abandonment of its No. 6 Hartley, C SE NW SE, Section 35-22-9, at 2,760 feet. It had no showings. This test is north of the Teeter Pool.

Empire Gas & Fuel Co.'s No. 4, NW cor. NE NW, Section 6-22-10, Browning district, was drilling at 285 feet. Kansasn Oil Co. has a rig on the ground for No. 1 Atyeo, C NW NW NE, Section 6-22-10. Mid-Kansas Oil & Gas Co. has a rig on the ground for No. 9 Pixley, C SE NW NW, Section 8-22-10. Theta Oil Co.'s No. 6 Pixley, SE cor. SW SE NW, Section 8-22-10, was drilling below 250 feet, and No. 8 Pixley, C SW, Section 8, is spudded in. White Eagle Oil & Refining Co. was drilling below 950 feet in No. 1 Austin, C NE SE NW, Section 12-22-10. Theta Oil Co.'s No. 16 Browning, C NE SW NE, Section 17-22-10, was being rigged up. C. W. Titus and others were drilling below 750 feet in No. 22, NE cor. SE NE NW, Section 29-22-10.

Sinclair Oil & Gas Co. completed No. 33 Browning, C SW SE NW, Section 20-22-10, was shot with 10 quarts in sand at 2,252-2,316 feet, and it started at 150 bbls.

Skelly Oil Co. was drilling below 590 feet in No. 2, SW cor. NW, Section 1-23-9.

In the Thrall-Burkett area, Connell and others' No. 1, C SW SW SE, Section 14-23-10, got sand at 2,084-2,102 feet. It was shot with 70 quarts and started at 70 bbls. Sundicate Oil Co. was drilling below 500 feet in No. 1, C SE NE NE, Section 20-23-10.

In the Seely area, the Empire Gas & Fuel Co.'s No. 9 Kipper, C SW NE SE, Section 11-22-11, made 150 bbls. the first day, after a shot of 220 quarts in sand at 1,845-91 feet. The same company's No. 7, SW cor. SE NW, Section 14-22-11, was spudded in. The same company's No. 8 Hutchins, C NW NE NW, Section 14-22-11, was rigging up. The same company's No. 5 Kellison, C SW NW NW, Section 14-22-11, is a 50-bbl. well after a shot in sand at 1,904-26 feet. Mid-Continent Petroleum Corp.'s No. 7 Clopton, SE cor. NW SW, Section 18-22-11, is drilling below 400 feet. York State Oil Co.'s No. 6 DeMalorie, C SE NW SE, Section 32-22-11, is a rig. The same company's No. 7 DeMalorie, CSL NW, Section 33-22-11, started at 75 bbls. after a 60-quart shot at 1,910-30 feet.

In the Madison district, rigs are up for LaMar & Hame's No. 1 Jeannerett, C NE SE SW, Section 3-22-12, and Phillips Petroleum Co.'s No. 2 Petrojo, C NE NE SE, Section 6-22-12, and Swartz and others are drilling below 350 feet in No. 1-A, C NW NE NE, Section 6-22-12.

In the Virgil area, Theta Oil Co.'s No. 10, SW cor. Section 3-23-13, got sand at 1,584-1,634 feet, and made a 20-bbl. well after a shot of 60 quarts. Mission Oil Co. was drilling at 500 feet in No. 1 NW cor. NE SW, Section 27-23-13. Mid-Continent Petroleum Corp.'s No. 8 Dehlinger, C SE NW NE, Section 29-23-13, is rigging up.

Northwest of Eureka, rigs are on the ground for Mid-Kansas Oil & Gas Co.'s No. 5 Ladd, acc. No. 6, C SE NE NE, Section 19-25-9, and No. 7 Ladd, acc. No. 3, C NW SW NW, Section 20-25-9.

Butler County

Empire Gas & Fuel Co. and Sheedy's No. 92, CEL west half NW, Section 21-25-5, El Dorado Field, Butler County, got the shallow sand at 648-69 feet, shot it and have a 10-bbl. well.

In the eastern part of the county, Connell and others have a rig on the ground for No. 2 Wilhite, C NE NW SW, Section 27-26-7. White Eagle Oil & Refining Co.'s No. 2, C NW NE SW, Section 27-26-7, was drilling below 300 feet; Sinclair Oil & Gas Co.'s No. 3, C NW NE SE, Section 22-27-7, drilling below 750 feet. The Texas Co. has a rig on the ground for No. 3 Truesdale, C SW SE SW, Section 22-27-7. Amerada Petroleum Co. was spudding in No. 1, C NE SE NW, Section 27-27-7, and No. 2, C SW SW NW, Section 27. The same company was rigging up No. 3 Truesdale, C SW SE NW, Section 27-27-7, and No. 4 Truesdale, C SE SW

NW, Section 27-27-7. Dixie Oil Co. has a rig up for No. 1 Truesdale, C NW NE SW, Section 27-27-7. Empire Gas & Fuel Co.'s No. 2 Tobler, SW cor. NW NE, Section 27-27-7, was rigging up. Phillips Petroleum Co. has a rig up for No. 2 Truesdale, C NW NW SW Section 27-27-7, and for No. 3 Truesdale, C NE NW SW, Section 27. Greenland Oil Co. is drilling below 450 feet in No. 2, SE cor. Section 28-27-7. Mid-Kansas Oil & Gas Co.'s No. 1, C SE SE NE, Section 28-27-7, is drilling below 350 feet. Lewis Oil Co. has a rig up for No. 1 Laughlin, C NE NW NE, Section 33-27-7. John Rodgers' No. 3, C NW NW NE, Section 33-27-7, was spudding in. These 16 new operations are southwest of the old Blankenship and Sallyards end of the southern shoestring of pools in Greenwood and Butler Counties, and where the Amerada Petroleum Co. and Phillips Petroleum Co. and others have already proven some productive area.

Tom Miller is spudding in a test, C NE NE SE, Section 13-26-8, over the Greenwood County line, and the Cowpunchers Oil Co. are drilling below 960 feet in No. 2 Drum-Bitler, CNL NE SE, Section 30-26-8, on the Butler County side of the township.

Northeast of the Fox Bush Pool, Lample & Pile have a rig on the ground for No. 1 Powers, C NW NW NW, Section 34-28-6, and east of the Fox Bush Pool Bason & Boyle drilled a failure in a test, SW cor. NW SE, Section 11-28-7, abandoning it at 3,172 feet, with no reported showings. Flack and others have started drilling a test, C SW SW SW, Section 4-29-6, east of the Fox-Bush Pool.

In Marion County, the Empire Gas & Fuel Co. and Sheedy's No. 4, C NW NW NE, Section 24-21-4, is a 25-bbl. well at 2,399-2,401 feet.

In Chase County, Hammon & Ward abandoned as a failure No. 1, C SE SE SW, Section 13-20-9, total depth 2,601 feet.

In Wichita County, Chastain & Chastain's No. 1 Howell, C NW NW SW, Section 17-27-1e, is spudding.

In Chautauqua County, Neely and others' No. 1, C SE SE SE, Section 20-31-10, was shot with 40 quarts in sand at 1,542-55 feet, and made 30 bbls. the following 24 hours. Empire Gas & Fuel Co.'s No. 1, C SE SE SE, Section 23-31-10, is spudded in.

In Sumner County, the Marland Refining Co. and Brady have a rig up for No. 1 Hollman, C NE NW NW, Section 24-33-2e. The same company's No. 1, CSL SW SW, Section 27-34-2, is spudded in. Prairie Oil & Gas Co.'s No. 1-A Brown, a twin, SW cor. NW NE SW, Section 34-34-2, got gas sand at 815 feet, and has a 2,500,000-foot gasser. Roxana Petroleum Corp.'s No. 3, C SW SW SE, Section 16-34-3, over the line in Cowley County, is a 1,000,000-foot gasser at 1,415 feet.

In Kingman County, where Port Fleeger and the Carter Oil Co. have been keeping the talent on edge for some time with their discovery well, C NE NE SE, Section 16-27-7w, Hopper and others had a rig up to deepen a well already drilled to 2,700 feet, on the Stevens farm, C NW NW NW, Section 7-26-7w, and T. B. Slick has a rig up for No. 1 Raul, C NW NW SW, Section 15-27-7w.

In Russell County, Link and others' No. 1 Dodge, C SW SE SE, Section 19-11-15w, was drilling at 2,705 feet. Midwest Oil Co.'s No. 31 Abbot, C SW SW SE, Section 29-11-15w, was abandoned as dry at 3,283 feet.

Cowley County

Roxana Petroleum Corp. has a rig up for No. 1 Slat, C NE NW SE, Section 36-33-4, Cowley County.

Trees Oil Co. has a rig up for No. 5 Smith, C SE NW SE, Section 10-31-3.

Arkansas Fuel Co.'s No. 1 Erickson, C SW SW SW, Section 20-30-4, was abandoned as dry at 3,400 feet.

Empire Gas & Fuel Co.'s No. 2-A Eastman, C SW NW NW, Section 5-31-6, is a 20-bbl. well at 2,825-63 feet.

Roxana Petroleum Corp. made a gas well of No. 3 Chapman, C SW SE SW, Section 16-34-3. It is good for 1,250,000 feet of gas at 1,426 feet.

Among Kansas Wildcats

In Phillips County, the Phillips Petroleum Co. and Prairie Oil Co. have a rig up for No. 1 McKinley, C S half SE, Section 13-5-18w.

In Graham County, Keys Brothers have abandoned as dry No. 2 Pixton, C NE SW SE, Section 23-8-24w.

In Russell County, Kruju and others' No. 1 Porsiphal, C NW SE SE, Section 13-11-13w, has a fishing job at 3,060 feet. The Derby Oil Co. and Streeter & Stearns' No. 2 Dodge, C NE SW SW, Section 32-11-15w, got sand at 2,869-73½ feet, and swabbed 20 bbls. an hour. Snowden & McSweeney's No. 1 Booth, SW cor. SE SW, Section 32-11-15w, is a 200-bbl. well from sand at 2,837-59 feet.

In Trego County, the Keys Petroleum Co.'s No. 1 Walsh, C SW NE SW, Section 5-11-25w, was abandoned as dry at 1,542 feet, and No. 1 Walsh, C NW NW SE, Section 5-11-25w, was abandoned at 1,356 feet.

In Russell County, the Derby Oil Co.'s No. 5 Sutton, C NE NE SW, Section 5-12-15w, is a 75-bbl. well at 2,767-72½ feet. The Valerius Oil & Gas Co.'s No. 12 Oswald, SW cor. NW SW NE, Section 8-12-5w, is a 90-bbl. well at 2,961-67 feet. The Valerius Oil & Gas Co.'s No. 1 Munsell, C NW NW SW, Section 17-12-15, is drilling at 870 feet. The Midwest Oil Co.'s No. 1 Katchustin, C NE NE SW, Section 30-12-15w, had a good show of oil and a hole full of water in sand at 3,000-70 feet, and the well was drilling at 3,165 feet.

In McPherson County, Danciger and others are drilling below 1,450 feet in No. 1 Anderson, C NW NW NW, Section 3-18-2w.

In Rice County, the Prairie Oil & Gas Co.'s No. 2 Welch, C SE SE SW, Section 35-20-6w, is spudded in.

In Hodgman County, Kruger and others have shut down at 3,406 feet on No. 1 Frizel, SE cor. NE, Section 19-21-22w.

In Barber County, the Skelly Oil Co. spudded in and shut down No. 1 Richardson, C SW SE NE, Section 30-30-14w.

The Watchorn Oil & Gas Co.'s No. 1 Morrison, C SE NE NE, Section 20-32-21w, Clark County, has been abandoned at 5,679 feet, the deepest hole drilled in Kansas. There was hard lime at 3,690-3,740 feet; a 3,500,000-foot gas showing with a spray of oil at 5,303 feet; 4,000,000 feet of gas at 5,319 feet. The bottom of the lime was passed through at 5,690 feet. The well was cased to 5,280 feet with 5⅞-inch casing.

SOUTHWEST TEXAS FIELDS

(Continued from Page 50)

the Los Animas grant in the Jim Hogg County Field. Houston Gulf Gas Co. has started a test on the Mesquite ranch in Block 9, Survey 3.

Zapata County

The Texas Co. which has been fishing at 3,200 feet in No. 1 Jennings in Zapata County for some weeks has put in a whipstock and will sidetrack the lost tools. Cullinan & Clark have the derrick up for their test in Survey 10, Block 9, near the Jennings test of the Texas. It is claimed there are indications that oil is a possibility in that region, The Texas Co.'s No. 1 Jennings, which blew in with big gas volume at 3,950 feet, having showed some oil before it was lost. Gleason has a derrick up on Block 12 of Survey 11 in Zapata County.

Jim Hogg County

Among the wildcats in Jim Hogg County, Rydal-Rycade are setting casing in their No. 2 Vela on Block 17 of Survey 580, half way from the Jim Hogg County Field down to where Pippin some months ago got an oil well. In Block 10 on Survey 291, a little northeast of the Pippin well, the Magnolia which made a location before Christmas is moving in a rig. C. O. M. B. Co. in the south edge of Survey 291 are shut down. Simms Oil Co. and E. L. Smith Oil Co. on Survey 233, a couple of miles south of the Pippin well, are drilling below 1,500 feet. A second sand was encountered at 1,470 feet in the test, a 10-foot sand at 1,390 to 1,400 feet having indicated a probable commercial well. Simms has made a location on Survey 291 for the second test, the first having been a gasser a half-mile north of the Pippin well. In the Henne, Winch and Farris proven field Killam is drilling on Survey 276.

Cole Gas Field

In the Cole Gas Field where Cin-Tex Petroleum Co. seems to have opened a new oil pool, Keeling and others are moving in a rig on Block 4 of Section 15. Cole Petroleum Co. has two rigs running on tests in the proven gas area to the west of the Cin-Tex oil well.

Carolina-Texas Area

In the Carolina-Texas gas field area in Webb County, there has been a slackening of effort to some extent. Snowden-McSweeney have started their second test on 682. Johnson & DeTray tested a small gas well on Survey 1,012. In the Mirando Field, Dr. Edgington got a well swabbing 1,000 bbls. on Block 75, offsetting the Keene well on the Bruni tract and has started his No. 2 on Block 75.

Karnes County

Earl B. Reynolds' No. 1 Butler in Karnes County, set and cemented 5 3/16-inch casing the past week by the Halliburton process at 3,000 feet with 221 feet of open hole below that. Casing was set on February 9 and the well will be ready to drill in by the last of this week. The well has been showing considerable oil. It is far removed from any production and is attracting considerable attention. It is back about 50 miles from the coast.

Milam County

Lee Oil Co. has set 12½-inch casing at 77 feet in its No. 1 Sanford, a mile or so east of Rockdale, in Milam County, and is now drilling at about 400 feet on a test for a new shallow field.

Zavala County

Old Dominion Co., drilling the No. 1 Pryor for the Continental Oil Co., is at 2,650 feet and the same company, drilling its own No. 1 Pryor, has pulled the 5 3/16-inch casing at 3,600 feet and has resumed drilling. The D. H. Byrd-Old Dominion is drilling at 1,700 feet.

Webb County

Bordo Oil Co., which had a showing of oil at 2,125 feet and tested did not get enough and is drilling deeper and will go to 3,000 feet. Henne & Winch, on Survey 43, are drilling at 1,140 feet. Muckelroy and others, in Block 11, Survey 335, is coring at 2,335 feet. Associated Oil on the Usher Carson lease, in Section 684, has a sand at 2,100 feet which is being tested. It is the gas sand level of the area. There is 16 feet of the sand.

Live Oak County

Plateau Oil Co. has the casing set at 2,368 feet in its No. 2 Collins in Live Oak County, in the southern part of the county near the San Patricio County line where it is seeking to develop a gas area. Glassco in the No. 2 Tips, a mile west of Three Rivers, in northern Live Oak, has a small gas well at 650 feet which will be turned to commercial use at Three Rivers. J. W. Walton has resumed drilling at about 1,300 feet in his No. 1 Odem, a mile west of Three Rivers.

Medina County

Buchanan & Tyrrell in the No. 1 Nixon on Survey 528 in Medina County, 10 miles straight south of Hondoo, the county seat, have set 6⅝-inch casing at 1,100 feet for a test of a sand from 1,108 to 1,191 feet. A split joint of casing let in water delaying the test and a string of 4½-inch is being set with packer. The well, barring any mishaps, will be tested this week. There is a showing of oil. It is considerably removed from any other production and will therefore mean a new shallow pool in Medina County if it is a producer.

Wilson County

W. I. Brashear's No. 1 Stanush, in Wilson County, south Lavernia, is drilling at around 1,750 feet. The well log is running high as compared with the normal estimates and the depths shown in other wells. Major oil companies have protected themselves with acreage.

E. L. Smith who moved a rig to the Wharton County salt dome and thus delayed his test in Caldwell County at Burdette Wells, a little northeast of the Luling Pool, is now rigging up.

Williamson County

A group of local people at Hutton, in Williamson County, have organized and are starting a test on the Sims farm, 5 miles southeast of Hutton. Jim Harper of San Antonio is drilling the well.

McMullen County

Sights and others are running casing in No. 1 Franklin in north central McMullen County, a few miles north of Tilden. He is setting 8¼-inch at about 1,400 feet for a test of a sand showing oil.

Starr County

A. T. Woods' No. 1 Kelsey, in Starr County, on Survey 75, a few miles north of Rio Grande City, is testing a sand at about 1,400 feet.

OKLAHOMA FIELDS

(Continued from Page 219)

Zolondok, SE cor. Section 22-24-6w, Garfield County.

Magnolia Petroleum Co.'s No. 1 Austin, SW cor. SE, Section 14-21-2w, was dry and abandoned at 4,527 feet.

Mid-Kansas Oil & Gas Co.'s No. 3, NW cor. NE SE NE, Section 18-22-3w, was dry and abandoned at 2,316 feet.

Knox Oil Co. completed a 125-bbl. pumper in No. 3 McClean, SW cor. NW NW SW, Section 31-22-3w, Noble County, in sand at 2,211-30 feet.

The Wentz Oil Corp.'s No. 10 Mahoney, NE cor. SW SE, Section 28-25-1w, Kay County, is a rig on the ground. The Texas Oil Co.'s No. 2 Siler, SW cor. NE, Section 28-25-1w, rig building. Roxana Petroleum Corp.'s No. 1 McGill, SW cor. NW, Section 29-23-4w, Garfield County, moving in rig; Roxana Petroleum Corp.'s No. 1-L, C SW SW SW, Section 18-22-3w, drilling below 300 feet; same company's No. 6-L, NE cor. SW SW, Section 18-22-3w, Noble County, drilling at 1,420 feet.

Completions and near completions in the Garber Field in Garber County, recently included the Sinclair Oil & Gas Co.'s No. 22 Hartley, NE cor. SW NW, Section 18-22-3w, abandoned at 3,747 feet; same company's No. 25 Hartley, NW cor. SE NW, Section 18-22-3w, sand at 4,395-4,414 feet, swabbed 15 bbls. with a show of water; No. 26, SW cor. NW NW, Section 18, oil at 2,620-27 feet, 250 bbls. naturally. Elmo Oil & Gas Co.'s No. 5, CWL NE SW, Section 31-22-3w, oil at 2,200-10 feet, 100 bbls. a day.

Holdenville District

In the Holdenville area, which includes Hughes, Seminole, South Okfuskee and Pontotoc Counties, the following new work is reported: Prairie Oil & Gas Co.'s No. 1 Grayson, SW cor. NW NW NE, Section 35-11-9, rig on the ground; Amerada Petroleum Corp.'s No. 7 Palmer, C SW NE SW, Section 36-10-9, rig up; Amerada Petroleum Corp.'s No. 1 Summers, SW cor. NW, Section 18-10-11, drilling below 680 feet; Mickelson and others' No. 2 McIntosh, SW cor. SE NE, Section 14-11-13, drilling below 850 feet; Foster and the Independent Oil Co.'s No. 2 Davis, C SW NW SE, Section 26-9-9, rig on the ground; Transcontinental Oil Co. and Independent Oil & Gas Co.'s No. 8 Proctor, C SE NW SW, Section 26-9-9, supdded in; Phillips Petroleum Co.'s No. 3 Long, C SW NE SE, Section 27-9-9, spudded in; Dixie Oil Co.'s No. 2 Garne, C SW NW NE, Section 5-7-8, rig on ground; Magnolia Petroleum Co.'s No. 2-A, C NE NE NE, Section 6-7-8, rig; same company's No. 1 Edwards, C NW NE NE, Section 8-7-8, rig on the ground; Byron and others' No. 1 C NE NW NW, Section 17-4-6, Pontotoc County, drilling below 500 feet.

Completions and near completions in the Holdenville district included T. B. Slick's No. 2 Polk, C NE NE NE, Section 10-9-9, sand at 3,315-17 feet, cleaning out, swabbed 12 bbls. a day, not completed; Arkansas Fuel Co.'s No. 1 Fat, C SW NW NE, Section 26-9-9, dry and abandoned at 3,485 feet; Transcontinental Oil Co. and Independent Oil &

Gas Co.'s No. 5 Harjo, C NE NE SW, Section 26-9-9, sand at 3,382-3,404 feet, 535 bbls.; No. 6 Harjo, SW cor. NW SW, Section 26, sand at 3,340-65 feet, 5,000,000 feet of gas and a spray of oil, trying to shoot; Independent Oil & Gas Co.'s No. 1 Hill, C SE NE NE, Section 27-9-9, sand at 3,434-42 feet, spray of oil 2,000,000 feet of gas, straight-reaming to run 5-inch casing; Champlin Brothers and others' No. 2 Skinner, C NE NE NE, Section 6-7-8, dry and abandoned at 3,335 feet.

Pure Oil Co.'s No. 1 Jonah, NW cor. NE, Section 15-9-7, was drilling at 1,-240 feet.

The Independent Oil & Gas Co. and Jarvis & Holm's No. 1 Cobb, C SE NE SE, Section 7-9-8, got sand at 3,289-3,-316 feet. It was given two small shots but made only 50 bbls. in 24 hours with a showing of water. It is not a completion. The same operators were building rig for No. 2 Cobb, C NE NE SE, Section 7-9-8. Twin States Oil Co. has a rig on the ground for No. 2, C NW SW SW. Section 8-9-8. Southwestern Petroleum Co.'s No. 1 Peter, C NE SE NE, Section 18-9-8, got sand at 3,310-36 feet. It swabbed and flowed 30 bbls. the first 24 hours.

Carter Oil Co.'s No. 2-A Carn, C SW NW SE, Section 1-9-9, was dry and abandoned at 3,915 feet, and No. 4 Cain, C NW SW SE, Section 1-9-9, was dry and abandoned at 3,398 feet.

Minnehoma Oil Co.'s No. 3 Cain, C SE SW NE, Section 1-9-9, found sand at 2,165-90 feet, which showed 5,000,000 feet of gas per day. Top of the oil sand was found at 2,930 feet. The well sprayed 75 bbls. of oil per day.

The Empire Gas & Fuel Co.'s No. 4 Proctor, C SE SE NW, Section 26-9-9, started at 540 bbls. from sand at 3,425-30 feet.

Independent Oil & Gas Co.'s No. 2 Fat, C NW SW NE, Section 26-9-9, was abandoned at 1,905 feet.

Independent Oil & Gas Co. and Empire Gas & Fuel Co.'s No. 2 C NW NW SW, Section 26-9-9, made 905 bbls. the first 24 hours from sand at 3,359-92 feet, 615 bbls. the second day and 496 bbls. the third, and then dropped to 400 bbls. A rig is up for No. 8 Harjo, C SE NW SW, Section 26, and rig was being erected for No. 9 Harjo, C SE NE SW, Section 26. Phillips Petroleum Co. has a rig on the ground for No. 4 Long, C NW NE SE, Section 27-9-9.

Smith and others' No. 1, C NW NW NE, Pontotoc County, Section 28-3-4, was drilling below 300 feet.

In the Southern Fields

Magnolia Petroleum Co.'s No. 3, NE cor. NW SW SW, Section 11-1n-3w, Stephens County, is a 30-bbl. well at 1,-541-46 feet, not completed. The same company's No. 9 Harris, C NW NW SW, Section 16-1n-3w, is a rig; No. 10 Harris, NE cor. NW SW NW, Section 16, drilling at 450 feet; Atlantic Oil Producing Co.'s No. 1 Bohanon, C NW SW NE, Section 19-1s-3w, rotary rig; Magnolia Petroleum Co.'s No. 5, C NE NE NW, Section 19-1s-3w, drilling at 775 feet; Mid-Continent Petroleum Corp.'s No. 1, C SW SW SE, Section 15-2s-3w, drilling at 1,150 feet; No. 2 C SE SE SW, Section 15, spudded in; Carter Oil Co.'s No. 2, SW cor. Section 22-2s-3w, drilling at 175 feet; Humble Oil & Refining Co.'s No. 7, CSL NE NE, Section 22-2s-3w, drilling at 990 feet; Magnolia Petroleum Co.'s No. 1 Morris, C NE NW NW, Section 22-2s-3w, spudded in; Twin State Oil Co.'s No. 3 Carpenter, C NW NE NW, Section 22-2s-3w, rigging up rotary; Coline Oil Co.'s No. 2, C NW NW NE, Section 7-2s-2w, Carter County, drilling at 266 feet; No. 3, C SE SW NE, Section 7, fishing at 1,-029 feet; Roxana Petroleum Corp.'s No. 3, C NE SE SE, Section 7-2s-2w, surface casing cemented; Skelly Oil Co.'s No. 1 Hardy, C SW NW SW, Section 8-2s-2w, rig on ground; Magnolia Petroleum Co.'s No. 1 Johnson, C SE NE SE, Section 16-2s-2w, rig up; same company's No. 1 Wilson, C NE SE SE, Section 16, standard rig.

Magnolia Petroleum Co. was drilling at 200 feet in No. 3, C SW NW NE, Section 3-2s-5w, Stephens County. Winkler and others' No. 1, C NW NW NW, Section 18-2s-7w, drilling at 400 feet; Gent and others' No. 2 School Land, NW cor. NE, Section 36-1s-9w, Duncan district, drilling below 200 feet; Safety First Oil Co.'s No. 7, CWL NE SW, Section 20-1s-8w, drilling at 50 feet; Murchison & Fain's No. 1 Williams, NW cor. Section 26-1s-8w, rotary rig; Guy Brown and others' No. 1, C NW NE SW, Section 28-1s-8w, drilling at 450 feet; Brannon and others' No. 3 Hanson, SW cor. NW NW NW, Section 35-1s-8w, rotary rig; Commercial Oil Co.'s No. 9, NW cor. NE SE SW, Section 12-2s-8w, drilling at 300 feet; Magnolia Petroleum Co.'s No. 2 Fobb, NE cor. SW SW, Section 12-2s-8w, rigging rotary.

In Carter County, the Humble Oil & Refining Co. is drilling below 200 feet in No. 3, C NE NE SW, Section 8-3s-2w, Carter County; Gibson & Johnson are fishing at 979 feet in No. 1, C SW SE SW, Section 2-3s-6w, Stephens County.

In Jefferson County, the Pure Oil Co. is moving in machine for No. 1 James, SW cor. SE, Section 28-6s-5w. Carter Oil Co.'s No. 2, SW cor. NW NE, Section 33-6s-5w, has sand at 1,179-86 feet, and a 30-bbl. showing; broken sand at 1,305-23 feet; 1,323-26 feet, 800 feet of oil in the hole, underreaming; Jenson and others are drilling at 850 feet, in No. 1-A, NW cor. SE NW, Section 9-5s-10w, Cotton County.

Staley & Winn are shut down at 50 feet in No. 1 SW cor. SE SW, Section 2-7s-6w, Jefferson County. Culbert & Lyle were drilling at 635 feet in No. 1, NW cor. SE SW, Section 3-7s-6w. Hivick and others have spudded in No. 1, NE cor. Section 22-7s-7w.

Lone Star Gas Co.'s No. 4, SE cor. SW SW, Section 19-1s-8w, Duncan district, was abandoned as dry at 2,222 feet. McMan Oil Co.'s No. 8, NW cor. SW NW, Section 33-1s-8w, is a 60-bbl. well at 2,266-71 feet.

GENERAL OUTLOOK IN CALIFORNIA FOR 1926

(Continued from Page 31)

continued shipments to the east coast during 1926. The writer on numerous occasions during the early part of 1925, predicted that tanker shipments would continue all during that year and in a recent article stated that he believed that California oils would continue to be shipped to the Atlantic Coast for the first four or five months of 1926, and possibly during the entire year. I can see no reason for changing this prediction except to supplement possibly by adding that prices in the east must be favorable to the reception of this oil. Unless local prices increase there will probably be comparatively little cracking in California during 1926 but, if conditions warrant, present plants and those under construction will be capable of meeting additional demands.

The amount of oil cracked during the coming year will be in excess of that treated during 1925, but it will be nowhere near what could be run if occasion demanded. The amount of oil cracked this year will probably have a direct bearing on the amount of gasoline that will be tankered east and although it does not look as though the present movement of gasoline to Atlantic and Gulf Coast ports will be maintained during the coming summer this is not impossible. The Shell, Associated, Pan American, Standard and Richfield all have or are building cracking units for future use and the output of these plants will have a direct bearing on the amount of gasoline available for local consumption and export.

In summing up one cannot but be impressed by the dependence of California upon Eastern markets at present to assimilate her surplus oil and while it does not look as though Western oils will exert a very big influence on conditions east of the Rockies during 1926, it is really a little too early to decide definitely. This State has such a large potential production that if eastern prices warranted it the output of crude and refined oils could be increased very materially. It is doubtful, however, if California operators would desire to follow this policy as the general rule seems to be to conserve crude resources wherever possible.

OIL LEADERS TALK AT OIL BOARD FORUM

(Continued from Page 33)

obvious that gasoline at 50 cents a gallon wholesale would probably displace all fuel oil, or at least down to a comparatively very small amount.

Mr. Teagle: It would pay to go on with the investment for cracking facilities to the extent that you would not have any commercial fuel oil left whatever; to crack it up to the last gallon.

Mr. Hoover: I was only wondering whether that margin is not much less than the difference between 11 cents and 50 cents, whether there is not a comparatively small factor, talking about fuel oil, that would bring the major portion of it across into gasoline?

Mr. Teagle: Well, I think there is, but I have not made up any figures, because they would be more or less in the nature of a guess. To arrive at that figure you would have to analyze the actual fuel oil consumption in the various parts of this country to see just what they could afford to pay. They could afford to pay much more in California than in the Ohio coal regions. And one of the difficulties today is that there is no really correct statistical information as to the exact consumption of fuel oil and the purposes for which it is consumed. If we had that information we could work out I think very closely a figure that for the different districts would represent a price that gasoline would have to go to to convert the oil in that particular locality into gasoline rather than to continue to sell fuel oil. I would be very glad to have our statistical people try it out, and send the Board that information. It will take a little time, and it will be an estimate rather than based on actual figures of consumption.

Cost of Conversion

Mr. Farish: Mr. Teagle, is it not an assumed figure now in the industry that the cost of conversion is probably about 5 cents per gallon on fuel oil into gasoline?

Mr. Teagle: That is correct.

Mr. Farish: Therefore, keeping in mind that differential in the cost of conversion would largely answer the question you asked, Mr. Secretary, as to when the impetus in the industry to convert fuel oil into gasoline would be effective.

Mr. Teagle: In California today, my general information is that the price of coal is such that oil would come to 6 cents a gallon, which would be about $2.25 per barrel before it would compete with coal. Take that 6 cents, the cost of the oil, the comparative value, and add 5 to 6 cents on to it for converting it, and you get a basic price there of around 12 cents. You can buy gasoline in California today for 7 or 7½ cents—probably 8½ to 9 cents. So that on that basis of 9 cents for the natural gasoline from the crude there is no particular advantage at the moment for the California refineries to put in cracking equipment to make gasoline out of fuel oil. It pays them better to take the natural gasoline out of the crude and sell their fuel oil as fuel oil in competition with coal. And the Pacific Coast public is, of course, getting the benefit of the lower price of fuel. And I do not think that having in mind the general condition existing out in that section of the country that any one can contend that the use of oil as it is being used out there for the generation of power is an uneconomical use under the conditions now existing.

Mr. Beaty: You used the figure 5 cents in the conversion. I understand that figure approximately represents the ordinary conversion. Then you are talking about continuing the process, going farther with the cracking of refractory crudes, which will really involve a larger figure.

Mr. Teagle: It is an additional cost of manufacture, and, just as Judge Beaty said, it would increase as you went farther with the process. But I should say that the average cost in the well equipped plants as they were run last year was about 5 cents.

Mr. Beaty: The way it was done last year.

Mr. Teagle: Yes.

Cracking Cost

Mr. Marland: In the Mid-Continent, Mr. Teagle, the top price for crude a good many years has been about 3 cents a gallon. If 5 cents is approximately the cracking cost would it be your opinion that if we had a 10-cent price in the tank car for gasoline we would all go to cracking crude?

Mr. Teagle: Well, I think that the entire tendency is in that direction at present. I do not think there is very much fuel oil being wasted in the Mid-Continent Field. I think the large part of the fuel oil that is being produced in the Mid-Continent is being cracked, and the resultant product after the cracking operation is being sold, naturally, as fuel.

Mr. Marland: I think that is the market tendency today. There is very little fuel oil being sold.

Mr. Teagle: Yes. Well, I think that is best shown by the fact that the quantity cracked last year was 65,000,000 bbls., against about 30,000,000 to 35,-000,000 bbls. the year before.

Mr. Davidson: So long as fuel oil remains the cheapest source of gasoline will not the economic tendency be to absorb the fuel oil regardless of the general level of gasoline prices?

Mr. Teagle: Absolutely. You would not run on a higher priced crude if you could make the same product out of a cheaper crude.

Mr. Davidson: So that the question as to what the price of gasoline is at present is not the determining factor. The determining factor is the cheapest source of gasoline supply, and therefore the economic tendency is to install cracking facilities and crack the fuel oil?

Mr. Teagle: That is the whole point that I tried to make in my paper yesterday.

Mr. Davidson: Is it a fact that little or no cracking is done in California, and that that is due to the oils there being more refractory than in the eastern country, where the cracking is done to a very great extent, and where the 5-cent cost is avaliable? If that is correct, if you answer my question in the affirmative, then would that not mean an addition to the 5-cent cost in California?

Cracking in California

Mr. Teagle: We all know that in handling California crudes there has been some difficulty in cracking them with the original form of equipment; and there is very little actual commercial cracking being done today on the Pacific Coast. It is cheaper to make gasoline out of natural crude oil at the present price of crude than out of the cracked product. But there has been quite a large quantity of California crude cracked on the Atlantic Coast because the cost of crude brought around there and run through the most up-to-date method of cracking makes it possible to crack California crude commercially. Later on, if the condition of crude supply and prices in California change, there is no question whatever but what California refiners will go ahead and install cracking equipment and crack California crude on the Pacific Coast. It has been done. I suppose 1,000,000 or 2,000,000 bbls. of California crude was cracked on the Pacific Coast last year and the yields from those cracking operations showed an increase from 15 to 18 per cent of the total content.

Mr. Marland: If we have for a short time relatively higher price for gasoline, will that result in very largely increasing our cracking facilities and bringing

about a stability of crude price never before known?

Mr. Teagle: I do not think there is any question about it.

Mr. Marland: And the bringing about of that stability of crude prices will stop these recurrent highs and lows in our production period?

Mr. Teagle: Absolutely. One of the things that has caused fluctuations in prices during the past few years has been the failure of the industry to recognize the influence that cracking has had. The industry has failed to understand we can now make gasoline from something other than natural crude oil and it is having a greater influence in leveling up the cost of crude oil.

Mr. Marland: The price of a gallon of crude oil plus the cost of cracking must fix the price of crude in the future?

Mr. Teagle: I believe so.

Available for Cracking

Mr. Welch: If you were to exclude California oil—you pointed out there is a special situation there—and if you were to exclude imported Mexican oils and other imported oils, do you believe the total quantity of fuel oil east of the Rocky Mountains if subjected at any reasonable price to cracking exceeds 100,000,000 bbls. on the basis of last year's total?

Mr. Teagle: I do not think so. The best information I have is that there would not be any more than 100,000,000 bbls. east of the Rockies that would be available for cracking.

Mr. Welch: There is a rough way to get at it by analyzing the yields of the refineries. If you start with the Atlantic Coast refineries and go clear through to the Rocky Mountains, it will be found from an analysis that there is practically no fuel oil derived from the Mid-Continent Field or from the eastern crudes which are being made in any quantity. On the Atlantic Coast most of the fuel oil produced from the refineries comes from imported crudes. Practically all of it is cracked and a very small proportion of fuel oil is produced. When you pass over the Pennsylvaina region the amount of fuel oil produced by the Pennsylvania refineries is negligible. When you get into Ohio the amount of fuel oil produced there amounts to practically nothing. When you pass on to Illinois and Indiana, the vast refineries in that territory, taking, for example, the plants of the Standard Oil Co. of Indiana, produce practically no fuel oil. When you pass on to Wyoming and to the Mid-West plants out there, the crude oil on the whole is being converted into these more valuable products. So when you go on down to the Mid-Continent Fields, even in the case of the Kansas and Oklahoma refineries, your cracking facilities have not been fully developed yet; the yield of gasoline in Kansas and Oklahoma, is already 50 per cent; so that really there is concentrated down in the Mid-Continent Fields and in Texas a comparatively small amount of fuel oil which can be subjected to cracking. The general impression that there is a vast amount of that fuel oil which can be converted is not substantiated by the figures issued by the Department of Commerce.

Mr. Teagle: The best average figures it is possible for our statistical department to make up covering the realization from a barrel of fuel oil for the last three years, show that the price of fuel oil has increased each year; the average price realized by the industry for fuel oil; and they also show that the price of gasoline during the three years—of course, this is not a weighted average; it is taken by the tank wagon statistics, considering 52 cities—has declined. So those figures, while they are only estimated figures, show the tendency that I spoke of yesterday of the value of a barrel of crude for fuel content to advance in price and level it down in this way with the gasoline.

Public Domain Leases

Mr. Beaty: There is one point I would like to advert to. It is in reference to Federal legislation on oil lands and oil conservation, the public domain that is subject to the leasing law.

At first blush it might seem desirable that the Federal Government, through Congressional legislation, should supersede, to some extent, the present leasing law, the operation of which would have the effect of withdrawal or partial withdrawal or leasing of some part of the public domain.

A study of that matter will show that outside of California—there is some in California—practically all of the land in which the Government owns the oil and is subject to the law is in the Northwest. It is in a section of our country where the supply of crude is rapidly declining. We had one great pool in that section at Salt Creek, which is on the wane and has been for some time.

Salt Creek Field

In connection with Salt Creek and built up in connection with it there was one great company operating, and in recent years other companies have entered that field. There might be a monopoly with no competition. That is not true at all now. But the new enterprises that have been projected into that section, the Northwest, the refiners and marketing organizations, are built up on the leasing law, on the supplies of crude oil that can be developed under the leasing law. I know, because of experience. A great deal of money is being expended in development there. They are looking hither and thither for crude supplies, and the greater portion of that is under the leasing law, to support the new installations that have been put in that section by those who propose to compete with the company that was originally there. That section of the country cannot be supplied with crude or with the refined products from California; it cannot be well supplied; it can only be supplied at great expense of cross overhauls, etc., from Group 3 of the Mid-Continent or some other section.

Karl Schuyler's Paper

Karl C. Schuyler of Denver sent a paper that was read. He was not among those who look to the early exhaustion of our well oil supply. He submitted figures to show that running costs of oil shale could be brought within 60 cents and the entire cost within $1 a barrel at this time. Also oil would come from deeper drilling. He saw the possibility of an unusual demand for the domestic oil burner and this demand together with that of industry, he said, may result in the necessity for an annual production of at least double that of last year and that might be realized in 10 years.

At the afternoon session, Mark L. Requa of San Francisco favored a rational cooperation between the Government and the petroleum industry to the end that production will at all times balance consumption with due regard to adequate reserves. But he said the facts point to the necessity for the most efficient use of the oil we have. Too much oil, he said, is burned as fuel.

"The relationship between the Government and the oil industry should be cooperative and not regulatory, for the reason that the industry is not monopolistic."

Lestern C. Uren, associate professor of Petroleum Engineering, University of California, spoke of the economic losses attendant upon competitive drilling and from other causes.

L. V. Nicholas, president of the Natural Petroleum Marketers Association, discussed systems of transportation and distribution of oil.

At the conclusion of the hearing, President Farish of the American Petroleum Institute, indicated that the institute at a later day and before the board concludes its report would like to have an opportunity for Mr. Hughes, its newly appointed attorney, to address the board. Secretary Work said that request would be taken up by the board.

Among the Audience

Among those present in addition to the board and the speakers were: E. C. Finney, assistant secretary, Interior Department; Edward S. Rochester, secretary of Federal Oil Conservation Board; Brig. Gen. Edgar Jadwin, War Department; W. H. McFadden, Marland Oil Co.; Vernon F. Taylor, Indiana, Pa.; E. W. Wagy, Standard Oil Co. of California; R. L. Welch, general secretary, American Petroleum Institute; M. N. Poe, Ohio Oil Co.; W. R. Boyd, Jr., assistant general secretary, American Petroleum Institute, who read Thomas A. O'Donnell's address in Mr. O'Donnell's absence; F. C. Proctor, Houston, Tex.; D. S. Bushnell Pipe Line Cos., P. R. Applegate, New York; R. D. Bush, Naval Oil Reserve Commission; E. J. Bullock, Standard Oil Co. of Indiana; Arthur Knapp, Philadelphia; Frank M. Brewster, Bureau of Mines; H. V. Moffett, Geological Survey; H. J. Lowe, Geological Survey; Dr. Van H. Manning, W. A. Kearney, Geological Survey, W. W. Fleming, John B. Hale, Ponca City, Okla.; Northrop Clarey, Standard Oil Co. of New Jersey; E. M. Clark, vice president, Standard Oil Co. of New Jersey; E. P. Salisbury, Standard Oil Co. of New Jersey; H. P. Snyder, Marland Oil Co.; Capt. Paul Foley, U. S. Navy; James C. Crawford, Washington; D. B. Dow, Bureau of Mines; C. E. Beecher, Empire Gas & Fuel Co.; Herbert E. Smith, Spokane, Wash.; J. Lewis Benton, assistant to president, National Association of Manufacturers; I. D. Foss, New York; W. A. Pierce, Gallup, N. Mex.; W. S. Guitteau, New York; W. H. Lewis, New Castle, Pa.; W. G. Laird, New York; Fayette B. Dow, American Petroleum Institute, National Petroleum Association, Western Petroleum Refiners Association; Willis Crane, traffic counsel; H. L. Lohnes, R. V. A. Mills, W. W. Duncan, H. H. Hill, chief petroleum engineer, Bureau of Mines; Scott Turner, Bureau of Mines; C. P. White, Bureau of Mines; Homer S. Fox, James A. Veasey, Carter Oil Co.; William N. Davis, president, Mid-Continent Oil & Gas Association; Admiral H. P. Jones, U. S. Navy; Commander H. A. Stuart, U. S. Navy; F. E. Scott, W. C. Hill, Lieut. Col. W. A. McCain, War Department, Maj. E. C. Kelton, War Department; Rear Admiral W. W. Phelps, U. S. Navy; W. P. Deppe, New York; H. K. Griffin, Bureau of Standards; C. B. Huntress; Representative Campbell of Virginia; R. H. Patchin, New York; Dr. Julian D. Sears, administrative geologist, Geological Survey; Col. George R. Spalding, Louisville, Ky.; W. H. McAlpin, Louisville, Ky.; Dr. David White, National Research Council; Arthur E. Wells, New York; L. Cammen, New York; Wallace E. Pratt, Humble Oil & Refining Co.; W. C. Mendenhall, Geological Survey; Oscar H. Reinholt, H. I. Smith, Geological Survey; A. H. Redfield, Bureau of Mines; Judson C. Welliver, American Petroleum Institute; Trell W. Yocum, American Petroleum Institute.

PHILLIPS PETROLEUM BUYS GIBSON INTEREST

FORT WORTH, Tex., Feb. 16.—Phillips Petroleum Co. has contracted to develop the holdings of the Gibson Oil Corp. in the Panhandle Field on a profit sharinfi basis and will immediately take over the operation of the properties, which consist of 4,000 acres of leases, mostly in southern Hutchinson County. There is one producing well which came in late last year with a flush of 260 bbls. The company is drilling three wells. No. 1 Whittenburg opened up new territory in south Hutchinson County and started a drilling campaign south of the Canadian River.

The Canadian River Oil Co.'s No. 1 Kingsland in Hutchinson County is showing for a producer, according to late reports. Unofficial estimates Monday morning were running as high as 700 bbls. per day.

OPENS HOUSTON OFFICE

The General Oil Tool Co. of California has opened a branch in Houston with F. E. Brock in charge. The company specializes in fishing tools, which are rented for such jobs and the work done under the supervision of Mr. Brock. The company uses the Kammerdiner rotary fishing jars and the Jones outside drill pipe cutter.

RECEIPTS OF CALIFORNIA OILS AND IMPORTS OF PETROLEUM

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the month of January totaled 2,497,000 bbls., a daily average of 80,548 bbls., compared with 2,678,000 bbls., a daily average of 86,387 bbls. for the month of December.

Receipts at Atlantic and Gulf Coast ports for the week ended February 6 totaled 702,000 bbls., a daily average of 100,286 bbls., against 526,000 bbls., a daily average of 75,143 bbls. for the week ended January 30.

	Total January	Total December	Wk. End. Feb. 6	Wk. End. Jan. 30
At Atlantic Coast Ports—				
Baltimore	290,000	193,000	94,000	70,000
Boston	418,000	*376,000	.....	80,000
New York	1,010,000	*882,000	309,000	298,000
Philadelphia	601,000	626,000	220,000	78,000
Others	158,000	300,000	79,000	*.....
Total	2,477,000	2,377,000	702,000	526,000
Daily average	79,903	76,677	100,286	75,143
At Gulf Coast Ports—				
New Orleans and Baton Rouge	.....	150,000	.....	.....
Port Arthur and Sabine district	.....	151,000	.....	.....
Tampa	20,000	.....	.....	.....
Total	20,000	301,000	.....	.....
Daily average	645	9,710	.....	.....
Total Atlantic and Gulf Coast ports	2,497,000	2,678,000	702,000	526,000
Daily average	80,548	86,387	100,286	75,143

*Revised.

According to figures collected by the American Petroleum Institute, imports of crude and refined oils at the principal ports for the month of January totaled 5,401,000 bbls., a daily average of 174,226 bbls., compared with 5,134,000 bbls., a daily average of 165,613 bbls. for the month of December.

Imports at the principal United States ports for the week ended February 6 totaled 1,043,000 bbls., a daily average of 149,000 bbls., compared with 1,312,000 bbls., a daily average of 187,429 bbls. for the week ended January 30.

	Total January	Total December	Wk. End. Feb. 6	Wk. End. Jan. 30
At Atlantic Coast Ports—				
Baltimore	386,000	397,000	84,000	.....
Boston	604,000	637,000	65,000	185,000
New York	1,533,000	1,104,000	173,000	194,000
Philadelphia	392,000	467,000	89,000	139,000
Others	679,000	*949,000	230,000	199,000
Total	3,594,000	3,554,000	641,000	717,000
Daily average	115,936	114,645	91,571	102,429
At Gulf Coast Ports—				
Galveston district	679,000	407,000	83,000	133,000
New Orleans and Baton Rouge	802,000	787,000	163,000	357,000
Port Arthur and Sabine district	175,000	215,000	51,000	*60,000
Tampa	151,000	171,000	105,000	45,000
Total	1,807,000	1,580,000	402,000	595,000
Daily average	58,290	50,968	57,429	85,000
At All United States Ports—				
Total	5,401,000	5,134,000	1,043,000	1,312,000
Daily average	174,226	165,613	149,000	187,429

*Revised.

MEDINA COUNTY WELL MAKES SHALLOW PRODUCTION RECORD

Above, left: Hondo, county seat of Medina County and on the Southern Pacific Railroad. Below, left: 500-bbl. tank run over in four days, and Bahmfaulk, the man in the center of the three. This was his first well as driller. He had worked as helper before. At right: Derrick and rig of the Taylor No. 1 of the Medina Oil Company

By B. D. Stevenson

SAN ANTONIO, Tex., Feb. 15.—Medina County has broken all records in South Texas for big production at shallow depth in the Medina Oil Co.'s No. 1 Taylor, 4 miles south of Hondo, the county seat. At a depth of 356 feet it ran over a 500-bbl. tank in exactly four days. The bleeding valve was six inches off the bottom of the tank and it was expected that in addition some more water would settle out of the oil. In any event, the well is big for its depth and much bigger than anyone would believe for many days.

The well is located on Survey 135, about 4 miles south and a trifle to the west of Hondo. It was drilled with big type cable tool rig and intended for a deep test. Ten-inch casing was set at 280 feet to cut off a water sand at 240 feet that furnishes water for domestic purposes on the farms all through that section. Below that was another water sand and 8-¼ inch casing was set at 327 feet but not cemented and was to be carried down with the cable tools.

At 356 feet the tools went out of lime rock and either in a crevice or very soft formation and seemed to swing loose and the hole filled considerably with oil. Pump was installed and the well pumped. It brought considerable water with the low gravity oil, sometimes more water and sometimes less but gave indication at first of producing much more than would be expected at the depth. It was first pumped into earthen storage but later into a 500-bbl. steel tank and overran the tank in four days. It is safe to say it made 100 bbls. a day.

It is several miles northwest of the Ina Field. The big cable rig is to be moved to a new location and light rigs moved in to develop the shallow sand. Last week at the suggestion of S. W. Blount, Jr., supervisor for the oil and gas division of the Texas Railroad Commission, the 8¼-inch was cemented to protect the water sand from contamination from the oil and the well will be drilled in again this week and put back on the pump.

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"Get Acquainted" to Solve Problem, Jobbers Are Told

DES MOINES, Iowa, Feb. 13.—Elimination of price cutting wars and the adoption of measures to place Iowa oil on a cash basis, concerned the annual convention of the Iowa Independent Oil Men's Association that drew 107 jobbers here.

The keynote discussion was struck by H. C. Wurster, Waterloo, Iowa, of the Blackhawk Co. at Waterloo, Iowa. He believed that greater understanding of the oil situation, better acquaintance on the part of the oil executives with their agents and with their competitors, and not too much concern for the shyster oil dealer who cut the price at the expense of service, would bring about the stabilizing of prices and the elimination of wars.

Mr. Wurster pointed out that in places where wars had taken place, the adjustment invariably came when the warring factors had become well enough acquainted with each other to talk things over and come to an agreement. He urged talking things over before lost money made dealers amicable, and said that greater personal acquaintance was the solution.

Such acquaintance must come first from the oil executive, Mr. Wurster said. The executive should begin by becoming personally acquainted with his agents, rather than working through some salesman who does not have the interests of the company truly at heart. He should also become personally acquainted with his competitor and if he finds cut-throat methods being used, get in touch with this man and ask him what his policy is. The Waterloo executive declared that in most cases it would never be necessary to suggest to a competitor either the consequences or the remedy for his act.

He urged oil men not to pay too much attention to the isolated cut throat, however. He declared that these "junk dealers" were really of no concern to the oil business than the second-hand clothing dealers are to a reputable house like Marshall-Field. He urged that oil men pay them no more attention than such second-hand dealers receive and to by no means cheapen themselves to his class.

Mr. Wurster's words met with hearty approbation. William Toole of Boone, Iowa, also felt that misunderstanding was the great cause of oil wars, and told how difficulties had been ironed out in his section by calling the oil men together for an occasional dinner, at which they became mutually acquainted and talked over their price-fixing troubles.

Against Selling Schemes

In the same connection the convention considered the efficacy of selling schemes and the advisability of allowing a quantity discount. A blanket condemnation of all selling schemes and the giving of prizes on opening days was halted by the contention of some members that certain of the so-called schemes had advantages which should be recognized. The convention had already gone on record favoring quantity discounts, and a rebate system for small buyers was praised as the sole means of putting the little fellow on something of parity with the bigger buyers. By this means, small customers were given the same advantage as the big dealer when they had duplicated the investment. A resolution was passed, however, in which the conferees pledged themselves against selling schemes in general.

Officials Elected

The convention closed with the naming of the officers for the coming year. A. M. Lommel, because of his outstanding work as a director during the past year, was elevated to the presidency. He is president of the Bartles-Sheppard Oil Co. of Waterloo. With him will be associated as first, second and third vice presidents, respectively: H. E. Wormhoudt of the Manhattan Oil Co., Des Moines; J. F. Connover of the Tri-State Oil Co., Calmar, and H. G. Scharfenberg, manager of the Community Service Station Co., Fort Dodge. Secretary L. Long of Des Moines and Treasurer J. M. Cushman, International Oil Co., Des Moines, were reelected.

The following directors were named: L. F. Kuehnle, Leader Oil Co., Dubuque; H. C. Wurster, vice president Hawkeye Oil Co., Waterloo; R. D. Seeley, sales manager Mason City Oil & Grease Co., Mason City; E. Rizk, president International Oil Co., Sioux City; H. E. Woodward, president Lincoln Oil Co., Boone; George S. Speaker, manager Cities Service Oil Co., Cedar Rapids; Ben Gerwe, president Davenport Oil & Supply Co., Davenport; H. C. Meier, president Pennsylvania Consumers Co., Council Bluffs; C. C. Johnson, Johnson Oil Co., Eldon; Fred Crawford, Highway Oil Co., Mason City, and J. Collins, Collins Oil Co., Knoxville.

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Secure Eight Streams From One Tower

All Desired Fractions Obtained in One Heating Operation. Arrangement Simple and Easy to Operate. Crude Used in Condensing

By George W. H. Reid

Two unusual, perhaps unique, skimming plants, each having a capacity of 5,000 bbls. of crude petroleum daily, and constructed along entirely different lines, constitute the refining installation of the Marine Refining Corp. at Vernon, Calif. These two plants, designated as plants Nos. 1 and 2, though yielding their fractions through a common receiving house are operated by separate crews of process men in so far as distillation work is concerned. While the two plants are similar to the extent that both employ tubular retorts of like dimensions and capacity, it is there that the similarity ceases. Both methods of operation and fractionation are essentially different and each installation presents a departure from prevailing practices in skimming plant operation. In this writing the unique installation termed as plant No. 2, will be described. No. 1 plant will be discussed in a later article.

Similar to several other refineries operating in the Los Angeles industrial districts, the Marine Co.'s entire assemblage of storage tanks, treating equipment, loading racks, warehouses, buildings, power house, water cooling equipment, distillation units, etc., is located upon a very small tract of land—in this case 3.97 acres. The construction of a 10,000-bbl. plant on such a small location, of necessity calls for very compact design and continuous efficient handling of oils and distillates.

Crude Oil as Cooling Medium

Several operating features of plant No. 2 are of unusual interest. The cooling of condensates by crude charging stock is accomplished as follows: The cool crude is charged to the "after-coolers," or what could also be termed, the preheaters, by a Fairbanks-Morse pump, 10"x6"x12" in size. Leaving the pump through a 4-inch discharge line the crude enters a header to be distributed to several 2-inch lines. These 2-inch lines are incased in 3-inch pipes, and this arrangement constitutes the construction of the preheater or after-cooler system. The construction is very similar to the usual heat intercharger when constructed of pipe on the counter-current flow principle. The cool crude flowing through the 2-inch pipes, flows counter-current to the condensates derived from the compartments of the multiple stream bubble type tower, which will be described later. Suffice it to state that the after-cooler functions to cool four streams derived from the seven compartments or sections of the tower. From the after-coolers, these streams are conducted to the receiving house at temperatures ranging from 100 to 120 degrees Fahrenheit. The crude, after passing through the after-cooling system enters a second header at about 265 degrees Fahrenheit, to be conducted to the inter-changers. Thus the cold crude oil is performing much of the cooling work usually done by water and condenser boxes, and at the same time the crude itself becomes preheated to a temperature almost equivalent to that usually occurring in efficient exchangers.

The partially heated crude next enters two Southwestern type exchangers which employ the hot fuel oil residuum from the separator as the heating medium. The first, or "single" exchanger increases the temperature to about 280 degrees Fahrenheit, while the second, or "double" exchanger raises the temperature of the crude to around 325 degrees Fahrenheit. Upon leaving the exchangers the crude is expanded into an old shell still, which is not fired, and from this still, which might be better termed as a separator, or primary vaporizer, a stream of 61 gravity, 375 end point gasoline is derived. These vapors are not fractionized, but merely condensed in a Southwestern condenser and delivered to the receiving house and run down. This still or separator also acts as a settling tank, wherein all foreign matter occurring in the crude is dropped. As an additional advantage the temperature of 325 degrees Fahrenheit imparted to the crude by the preheaters and exchangers is sufficient to remove all moisture occurring in the petroleum. This arrangement of preheating and separation makes it possible for the company to distill almost any crude regardless of its water and b.s. content. The advantages of such conditions to the buyer of crude are obvious, for inevitably a certain proportion of oil emulsions are yielded as good oil when the emulsion is broken down.

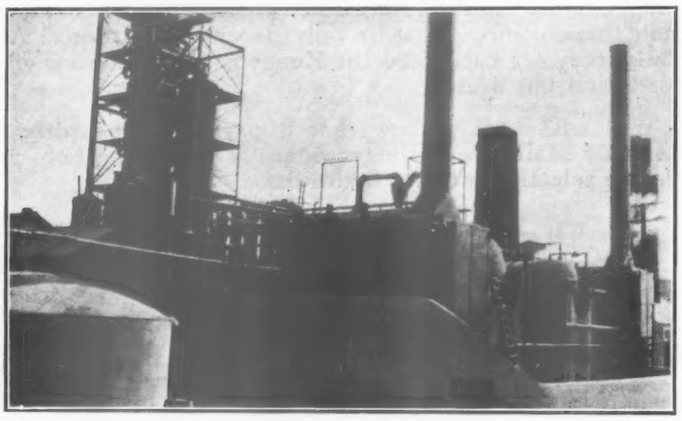

Figure 1.—View of tubular distillation equipment of the Marine Refining Corp.'s Vernon, Calif., refinery

Tubular Retort

The still charging pump then charges the crude from the shell still separator to the tubular retort. This retort consists of 96 joints of 4-inch tubing. Illustration No. 1 shows the distillation equipment, or tube still. The shell stills shown are a part of the original plant equipment, and are employed at present in the manufacture of small quantities of certain special fractions which the company supplies upon demand. The burners at the front of the stills are of interest in that they are so constructed that either gas or fuel oil, or both at once, may be employed as fuel. The company burns gas under boilers and stills, using oil only as auxiliary fuel.

The crude enters the tubular retort at about 280 degrees Fahrenheit—for the separation of vapors in the shell still evaporator has a cooling effect. Usually the tube still is operated at 450 to 500 degrees Fahrenheit—depending upon the type of crude being distilled. Leaving the pipe still the crude enters the separator, or evaporator, near the top, dropping to the bottom where the residuum is conducted to exchangers and storage. The vapors leave the top of the separator and are conducted through a 12-inch vapor line to the bottom, or first section of the one-multiple stream, bubble type tower.

Eight Streams From Tower

During the last 3 years the more progressive members of the refining industry have made great strides toward the perfection of highly efficient fractionation equipment. The bubble type tower was borrowed from the alcohol industry and in its application to petroleum fractionation problems it has become extensively employed. The bubble device has been incorporated in numerous manners of mechanical arrangement—most of which are now common knowledge. The application, however, of this type of fractionation equipment to the single tower for the fractionation and separation of all the fractions desired in one heating operation is the goal desired of many experimenters, and the perfection of such equipment has been obtained by a very few. The inventors and patentees of the equipment being described at this time are J. A. and Frank A. Millif.

Illustration No. 2 shows the tower as it is installed at the No. 2 plant at Vernon. As is noted, the tower is rectangular, being 4 feet by 6 feet and 42 feet in height. Each section is 6 feet in height, the compartments being seven in number. A series of platforms are constructed 6 feet apart, one at the base of each compartment—all of them being connected by steel steps. This arrangement lends to the accessibility of controlling devices—all of which are located on the outside of the tower.

Figure 2—Multiple stream bubble tower from which is derived eight separate streams, all finished, with no subsequent redistillation.

As each section, or compartment, of the tower is essentially a duplicate of the other sections, it is only necessary to describe only one compartment in detail.

First, the compartment is 4x6x6 feet in dimensions. In this space are 6 plates having 5 bubble caps each, or 30 bubble caps per section. A patented liquid level control device is employed which consists of a pipe leading the accumulated condensate and reflux stock outside of the tower and down to the next plate, where it is led into the tower again to flood the lower plate. The level is controlled at the point of exit of the condensate by a Weir valve, the manipulation of which makes the depth of the liquid through which the vapors must pass as variable as desired. Thus a certain flexibility of the fractionation or selection is assured, and though variable as needed, is always under control. In addition, gauge glasses are placed outside the tower which indicate to the operator just what his liquid level, or amount of liquid, is on each plate in the compartment or entire tower.

Recycling Devices

Further, each separate compartment is equipped with devices for recycling or spraying. There are three points of entry provided in each section for refluxing material. This is an additional direct control device and assures the placing of recycle media where it is most needed—either to build up the liquid level in the plates where a higher level is needed; or to cut out spray stock from plates which do not require it. Thus each of the compartments can be flooded, or not, at the will of the operator.

In addition, each compartment is provided with steam coils for the governing of partial pressures, or for heating or cooling where such become necessary. In the operation of the tower only one section is requiring steam—but the coils are provided in all sections for instant use in the event any change of conditions necessitate it.

Each compartment is also provided with heating coils so arranged that the hot residuum from the separator may be conducted to the tower. This is provided for control of tower temperatures when abrupt or sharp changes of climatic conditions necessitate it. The tower is well insulated throughout, however, and the weather conditions since the installation of the tower last August, have been very even, and the residuum has only been run through the coils in the tower sections for short periods for experimental purposes.

By the aid of steam heat, when necessary, the tower is at all times subject to control. Recycle stocks of two types aid further in the control of each compartment. The condensate of each of the seven sections constitutes a separate fraction off the crude. As previously stated, the condensates from all seven sections of the tower are cooled by flowing counter-current to the cool crude in the after-coolers.

Seven Towers in One

The tower, probably, should be described as seven towers in one, for each compartment or section condenses and fractionates a certain proportion of the rising vapors and delivers its condensates to the receiving house, and to all practical purposes acts independent of the other six sections. Each section is separately controlled, and its action as to

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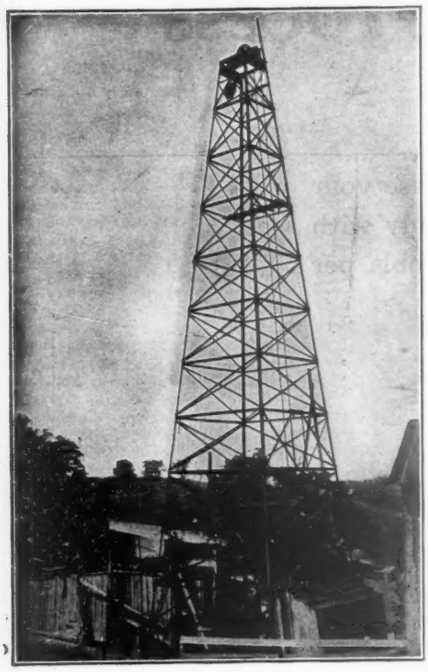

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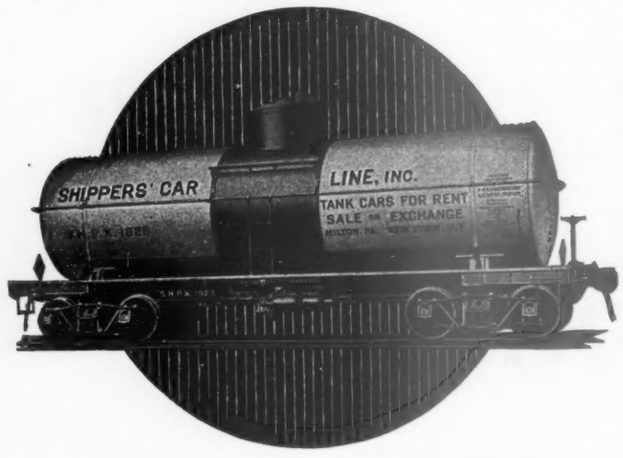

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temperature is recorded on a separate Foxboro 24-hour recording instrument. By means of various patented control devices, controlling temperatures, liquid levels, rate of recycle feed, etc., each 6 feet of the tower is made to deliver as condensate, a separate and distinct fraction of the vapors, or crude. No trouble with back pressure has been met with in operating this equipment.

While the tower actually delivers eight streams to the receiving house and after-cooling system, the number of finished streams appearing in the receiving house is reduced to five. This is accomplished in the following manner: Sections 1 and 2 together form one stream, combining the two fractions outside of the tower just before entering the cooling system, this is stream No. 1. Section 3 delivers a stream separately as stream No. 2. Condensates from sections 4 and 5 of the tower, are combined in stream No. 3. Sections 6 and 7 produce stream No. 4. The overhead vapors leaving the top of the tower are condensed in Southwestern equipment, forming stream No. 5.

The writer was permitted to inspect the routine laboratory reports covering the operation of the tower and the condensates yielded, covering the entire period of operation since August, 1925. The following is a copy of the laboratory runs secured on the days the plant was visited, which are representative of the usual results obtained since the installation of the equipment. The products vary in their physical characteristics to some extent, over a period of months, whenever the type of crude is materially different—such variation being in line with the usual results appearing on any plant where crude oil is of varying gasoline content.

Streams off tower—

		Distillation record				
Sec.	strms.	grav.	I.B.P.	20%	50%	90%	E.P.
1 & 2	No. 1	35.5	400	F. 10% off at 480			
	3 No. 2	38.6	365	420	455	510	550
4 & 5	No. 3	40.2	339	410	435	485	525
6 & 7	No. 4*	44.9	265	317	352	415	450
Overhead Vapors	No. 5*	50.0	185	215	298	382	432
Stream off interchangers and separator— No. 6* 61.5 105 I.B.P. 375 E.P.							

Crude to stills 26-27 24.7% gasoline.

Fuel oil residuum 20 grav. Flash 180 Pensky (closed cup).

*Color o. k.

Plant reports covering yields and percentages, etc., daily, for the last six months, indicate that the percentage of gasoline recovered from plant No. 2 as compared with the laboratory analysis of the crude being charged to the retort, checks within one-half of one per cent of the results secured in the laboratory.

The perfection of this tower is the result of years of experimental work in fractionation equipment. The device is of unusual interest to refiners at present, because of the general trend toward compact design of highly efficient, "one heating," plants, and the removal of all fractions in one piece of equipment is an advancement of no little importance toward the elimination of much costly and cumbersome apparatus.

CENTRAL WEST HAD A PROSPEROUS YEAR

(Continued from Page 118)

June proved a good month for better producers over the Lima Field. The Ohio Oil Co. drilled in No. 50 on the Northwestern Ohio Gas Co. farm, Section 29, Bloom Township, Wood County, and found a 40-bbl. flush well at 1,331 feet, while in Lake Township, same county, Lantz, Gregg & Schultz hit a 60-bbl. well in No. 7 Schultz farm, Section 35. These two wells show that the Trenton formation is by no means exhausted of its crude production. Just out southwest of Bowling Green in Plain Township, also in Wood County, Eckler & Collins' No. 17 St. John farm, Section 35, produced 40 bbls. at 1,593 feet. The Crystal Oil Co. further extended the producing area of Jackson Township, Auglaize County, by drilling in a 50-bbl. flush well on the Wohrmyer farm, Section 23. The Boston-Southwestern Oil & Gas Co.'s fourth well on the Fred Preiser farm, Section 20, Douchouquet Township, same county, produced 50 bbls. Mack P. Colt during this month struck his best well on the W. M. Miller farm, Section 4, Center Township, Mercer County, when No. 3 showed 60 bbls. Stelzer & Boyd extended the Van Wert County Field when they drilled in a test on the Thomas E. Jones farm, Section 31, Jennings Township, for 35 bbls. The Fort Laramie Oil & Gas Co. made a 75-bbl. strike in a second test on the Frank Danzig farm, Section 16, Cynthian Township, Shelby County. Hardin County dropped in line with a 72-bbl. flush well struck by the Roundhead Oil & Gas Co. in No. 6 on the Irwin Hites farm, at 1,480 feet. R. S. Raydure attempted to find a paying producer in a wildcat on the James Cross farm, Section 1, Ridge Township, Wyandot County, but found an abundance of salt water without an oil coloring. South of the town of Payne, in Benton Township, Paulding County, the Richland Oil & Gas Co.'s test on the Sam Stabler farm, Section 3, produced 28 bbls. of oil and shows a gas volume of 1,000,000 feet.

July's important venture was a test drilled by the Rottinhouse Drilling Syndicate on the Clara Sherman farm, Section 3, McLean Township, Shelby County, finding a 40-bbl. flush well, which is 1½ miles in advance of production. Charles F. Zeisinf and others' wildcat on the J. F. Hurrelbrink farm, Section 35, Lake Township, Wood County, produced 30 bbls. and extended the field several locations. The oil was found at 1,314 feet. The American Natural Gas Co.'s test on the Joe Zimmerman farm, Section 15, Cynthian Hownship, Shelby County, had a flush of 52 bbls. and extended the producing area close to one-half mile. In McDonel Township, Hardin County, the Roundhead Oil & Gas Co.'s test on the Jess Dysart farm produced 40 bbls. at 1,485 feet. In Harrison Township, Paulding County, Ogle & Wigdon drilled a test on the John Stabler farm, Section 32, and approximately 2 miles west of the Payne Field, and got a 17-bbl. flush well, and contemplate drilling the big lease up during 1926. George S. Lacknett drilled a test on the M. Pepple farm, Section 3, Benton Township, same county, and south of Payne, that showed 35 bbls. at 1,455 feet.

August had several tests that extended the producing areas of the various counties a short distance from old producing wells. In Plain Township, Wood County, Barclay Perry's test on the J. A. Foos farm, Section 34, pumped 25 bbls. at 1,547 feet, and in Liberty Township, same county, the Underwood Oil & Gas Co.'s test on the Emily Thomas farm, Section 1, showed a flush of 70 bbls. at 1,593 feet. In Section 4, Washington Township, Auglaize County, a test by E. B. Jack and others on the H. Steve farm, with a flush of 25 bbls. extended production a few locations. In Benton Township, Ottawa County, F. C. Johnston and others' test on the Harry Pfeifer farm, Section 30, produced 25 bbls., also an extension of a mile or so. The Boston-Southwestern Oil & Gas Co.'s No. 1 Howard Evans farm, McDonel Township, Hardin County, with a flush of 55 bbls. is an extension of a few locations from production.

September was not a very active month for testing work, although seven of them were drilled in Allen, Wood, Auglaize and Shelby Counties, but none of them were more than a few locations from producers, outside of the well drilled on Catawba Island, in Ottawa County, of which mention is made above.

October is credited with one advance well, drilled by Lee A. Watson on the F. Turner farm, Section 35, Cynthian Township, Shelby County, with 10 bbls. In the same township, the Fort Laramie Oil & Gas Co. struck a 50-bbl. well in No. 5 Frank Danzig farm, Section 16. A nice gas pressure was found at 1,278 feet and oil at 1,327 feet.

November's best completion was a 70-bbl. well in well No. 2 on the H. Wiseman farm, Section 27, Cynthian Township, Shelby County. The Wittmer Property Trustee's test on the H. Barnhorst farm, Section 22, same township, pumped 45 bbls. at 1,308 feet, while its No. 2 Zimmerman, Section 15, showed 45 bbls.

December's tests were of little impor-

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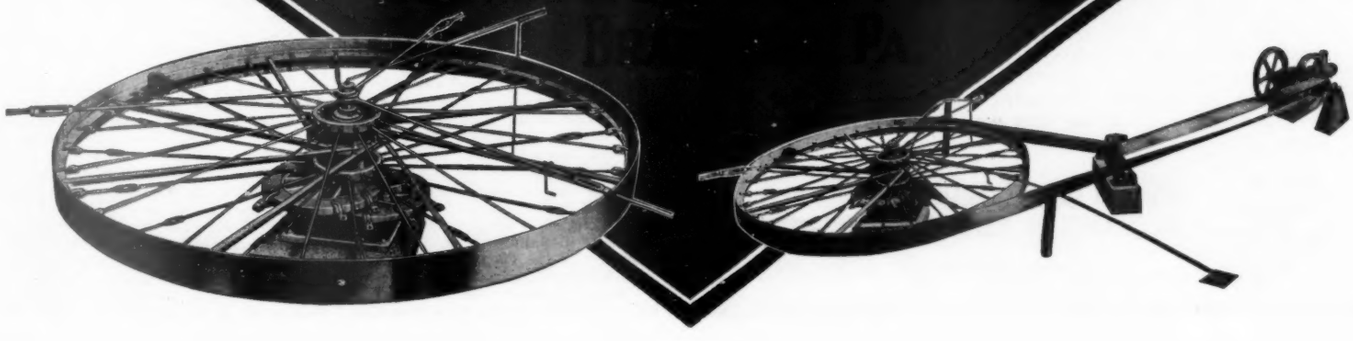

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tance outside of a well drilled by the Delphos Drilling Co. on the William Lenney farm, Section 12, Bath Township, Allen County, with a flush of 40 bbls. at 1,358 feet. In Cynthian Township, Shelby County, the Wittmer Property Trustee's No. 3 Joe Siegel farm, Section 15, pumped 62 bbls. flush at 1,313 feet.

MICHIGAN

Indications are that an interesting development will proceed in the Saginaw Field of Saginaw County, Michigan, early in the spring. Two wells were completed in the last quarter of the year in the north and western portion of the City of Saginaw, by the Saginaw Prospecting Co. They are credited with approximately 30 bbls. each, making them profitable, even at a depth close around 1,900 feet. The oil is found in the Berea sand and is of a good quality, bringing Pennsylvania prices. Two additional wells are now under way and upon their outcome depends largely the work that is figured to start early in the spring.

A large amount of leasing has been done in all directions for miles back of the two wells. Some of the companies and individuals taking up leaseholds are Mid-Continent oil operators. While the two wells thus far completed are not of a character to cause any undue excitement, some of the Mid-Continent oil men are of the opinion that other productive wells will be found although they may be some distance from the discovery wells.

The Michigan-Ohio Oil Co. staked out seven locations in the western portion of Monroe County, just across the Ohio line, near Ida, Grape and Dundee and the company expects to start two strings early in the spring on two tests at Ottawa Lake in the same county.

CENTRAL OHIO

The Central Ohio Field did not show as much activity in 1925 as in 1924. Only 434 wells were completed, 76 of which were oil wells, with a flush production of 2,284 bbls. There were 103 dry holes and 255 gas wells, compared with the 1924 figures of 605 completions, 73 oil wells, 1,993 bbls. production, 247 dry holes and 385 gas wells. This is a decrease of 171 in completed wells, 44 dry holes and 130 gas wells, while there were three more oil wells and 291 bbls. more initial production.

Nearly every well drilled by the gas companies was an outside test, as the location of new gas pools was the one thought at the opening of 1925. As far as the finding of gas is concerned, the year proved good, also in the discovery of oil, so both oil and gas men are satisfied with the year's work.

Although there were a number of gas wells that measured a volume as high as 9,250,000 feet, some at 6,000,000 and 5,000,000 feet, the average runs below 1,000,000 feet to the well. The year 1926 will, no doubt, see further test work in counties virgin to the drill for both oil and gas. While close to 100,000 wells have been drilled within the borders of Ohio in the past 50 years, there is still plenty of undeveloped territory that may prove prolific and very little of it will escape the drill.

One of the most prolific and active gas fields opened during the past year was that in Columbia Township, Lorain County, a spot that was considered of little value up to the time test work proved it different. Holmes County leads in both oil and gas and bids fair to make a very prominent oil producing area. Oil is now being produced in large quantity in this county, which was discovered in the hunt for natural gas. The first oil well of the year of any size in Holmes County was the Empire Gas & Fuel Co.'s test on the S. S Troyer farm, Section 33, Hardy Township, with a flush of 125 bbls. and struck during May. The first oil wells reported at the start of 1925 was the same company's No. 1 on the J. B. Finney farm, Lot 5, Monroe Township, same county, with a flush of 25 bbls., in January. In February, the Logan Gas Co. opened a 5-bbl. well on the Steiner farm in Milton Township, Wayne County. March shows a 45-bbl. well drilled by the East Ohio Gas Co. on the Sterling farm, Section 36, Hardy Township, same county. Same company in April discovered a 43-bbl. well on the Close farm, Lot 9, Monroe Township, same county, while in Prairie Township, same county, the Pure Oil Co.'s second venture on the W. H. Miller farm, Section 19, showed 70 bbls.

May shows that the Ohio Oil Co. drilled its initial test on the Peter Shelly farm, near Wooster, in Wooster Township, Wayne County, resulting in a 45-bbl. producer from the deep Clinton formation. During June the East Ohio Gas Co. struck a 10-bbl. well in No. 1 Dave Anderson farm, Section 17, Prairie Township, Holmes County. July came to the front with the first oil well of recent years in Columbia Township, Lorain County, where the Daugherty Brothers brought in No. 2 on the F. O. Akins farm, Lot 47, for 10 bbls.

In August more territory was added to the field. In Granger Township, Medina County, a wildcat drilled by the Empire Gas & Fuel Co. on the Frank A. Welton farm, Lot 51, was credited with 30 bbls. from a depth of 3,413 feet. In Wooster Township, Wayne County, the Ohio Oil Co.'s No. 2 Jesse Hess, Section 21, showed 45 bbls. In Hardy Township, Holmes County, the East Ohio Gas Co.'s No. 2 Dave R. Anderson, Section 24, produced 125 bbls., and its No. 2 S. W. Sterling, Section 26, same township, after drilling deeper into the Clinton, showed 250 bbls.

During September the leading completion for oil was the Ohio Oil Co.'s No. 3 W. M. Orr, Section 21, Wooster Township, Wayne County, with 50 bbls. October's best completions for oil were: The East Ohio Gas Co.'s No. 6 Jacob Uhl, Section 22, Hardy Township, Holmes County, with 110 bbls. flush, and the Empire Gas & Fuel Co.'s No. 5 Smith farm, Lot 4, Monroe Township, same county.

The most important find during November was the Logan Gas Co.'s initial test on the Roy Van Winkle farm, Section 15, Perry Township, Coshocton County, with a flush after shot of 150 bbls. This same company's second venture on the Scott V. Mast farm, Section 8, Hardy Township, shows 110 bbls. The Pure Oil Co.'s No. 1 J. Clark Smith farm, Section 18, Prairie Township, had a flush of 100 bbls. Another interesting venture was made by the East Ohio Gas Co. in a wildcat far from production on the John Concle farm, Section 5, Clark Township, Coshocton County, showing 48 bbls. and means the opening of another new pool to shoot at during 1926.

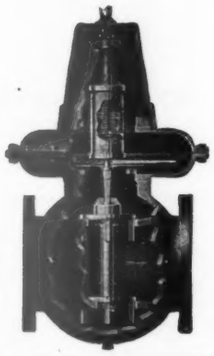
December's well of note was the Ohio Gas Co.'s No. 2 on the Frank Miller farm, Section 22, Wooster Township, Wayne County, with a production of 75 bbls.

INDIANA

The Indiana Field showed an all around slump during 1925 when compared with the 1924 figures. During the year just closed there were 128 wells completed, 1,600 bbls. new production, 41 dry holes, 5 gas wells and 114 old wells abandoned. A decrease from the previous year's work of 22 completed wells, 1,845 bbls. new production, 5 dry holes, 6 gas wells and 64 less abandoned wells.

The year 1925 opened when Nelson Brothers struck a 50-bbl. well in a wildcat on the E. M. Harper farm, Section 8, Barton Township, Gibson County, in January at a depth of 1,342 feet and extended the Princeton district some distance. Not until March was any well of note found and that was the Ohio Oil Co.'s wildcat, far from production, on the T. J. Parker farm, Section 16, Monroe Township, Pike County, which had a flush of 105 bbls. at 1,306 feet. In Section 9, same township, the Consolidated Oil Co. and Nelson's test on the G. W. Taylor farm, produced 45 bbls. at 1,319 feet. Miller & Davis also completed a wildcat on the Charles Rumble farm, Section 13, Logan Township, same county, good for 15 bbls. at 1,325 feet.

May shows that J. H. Young and others brought in a wildcat on the Thomas Compton farm, Section 1, Union Township, Gibson County, good for 30 bbls. at 1,491 feet, and in Logan Township, Pike County, H. E. Merrifield and others' No.



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R E S U L T S

9 B. Dhaffer, Section 23, flushed 35 bbls. at 1,386 feet.

June shows some development work well scattered over the State. A. M. Jones drilled a test on the W. S. Bourne farm, Section 22, Penn Township, Jay County, for 20 bbls. in the Trenton. Rice & Cross struck one at 20 bbls. at a test on the H. Teeter farm, Section 31, Wabash Township, same county.

It was in July that Sargent, Hartman and others started their development work on a block of leases secured by them in Veale Township, Daviess County, in southwestern Indiana, and completed their first test on the Frank Gaither farm, Section 21, for 70 bbls. and this well is still reported doing between 40 and 50 bbls. daily at 941 feet.

August brought forth a new producing area in Maumee Township, Allen County, near Woodburn, about 18 miles northeast of Fort Wayne, and about the same distance northwest of the Payne Field in Paulding County, Ohio. The Schuran Oil Co. brought in its wildcat on the Gerber farm, Section 16, Maumee Township, for 50 bbls., while the West Mansfield Oil & Gas Co.'s well on the Richard Johnson farm, same section, did 50 bbls. This will be an active spot during 1926, as plans are now being made for the work. Joe S. Young, Jr., and others drilled a test good for 25 bbls. on the G. W. Finch farm, Section 6, Barton Township, Gibson County, at 1,509 feet.

September had a few wells of value, as Mesel & Mesel's Nos. 5 and 6 D. Bergman, Section 21, Bear Creek Township, Jay County, produced 50 bbls. each from the Trenton sand. In Logan Township, Pike County, P. C. Andrews and others' No. 6 Enos Loveless, Section 14, showed 68 bbls. at 1,347 feet.

Sargent, Hartman and others drilled in their second test on the Frank Gaither farm, Section 21, Veale Township, Daviess County, in October for 50 bbls.

ILLINOIS

The leading feature of the Illinois Field during the year is the opening in September of the Stillwell Pool, east and northeast of Allendale, in Wabash Township, Wabash County, by Risley and others on the S. J. Stillwell farm, Section 1, with a production from the Biehl sand of better than 500 bbls. flush. This discovery well attracted wide attention and within less than a couple of weeks close to a dozen strings of tools were working and at the close of the year there were close to 30 wells drilling. Since the discovery well was struck in that area the Jordon sand, which lies below the Biehl sand, has been discovered to be productive and now the wells can be drilled so as to get production from each sand. This gives Wabash County three pay sands, the other pay being the Bridgeport sand, which is the shallowest and runs around 1,150 feet; the Biehl sand around 1,350 feet and the Jordan sand at better than 1,400 feet. Since the completion of the discovery well more than 30 new wells have been brought in with a very small percentage of dry holes, something new for Wabash County, and the pool has been extended nearly a mile to the northwest and east and half a mile or so north and south, which makes quite an area to drill over before the pool is drilled up. Considerable gas is also being found in the field, but comes mostly from the shallower Bridgeport sand. What are called the three best wells in the field are the discovery on the Stillwell, the Kogan heirs and the Leek farms.

Another redeeming feature for the older Illinois Field is the finding of a pay sand about 100 or so feet below the Stray sand, from whence came the good production in Casey Township, Clark County, in Ellis, Myers and others' second test on the A. W. Baker farm, Section 36. The new sand, which proved to be the Niagara limestone, was found at 1,587 feet, and since then a number of the more shallow wells have been drilled to this limestone, with good results. The Niagara is also found in the Martinsville Township Field in the same county, about 1,000 feet below the Niagara lies the Trenton Rock, which is productive in the Martinsville Field.

Old-timers in the Illinois Field will remember the striking of the first McCloskey sand well on the McCloskey farm, Section 25, Dennison Township, Lawrence County, and the big gushers that were found in that pay back about 1908. During the past year the International Oil & Gas Co., that owns the McCloskey lease, drilled in their No. 12 well and secured a 100-bbl. flush production from the same formation.

TENNESSEE SHOWED PROGRESS IN 1925

(Continued from Page 120)

Creek wells and a mile north of the Raydure Pool in the Sulphur Creek area.

During the first part of 1925, Reed, Heckathorne & McClintock opened a new pool at Pulsey Creek, when their venture on the Hughes farm 3½ miles east of production at Kettle Creek and 3 miles south of Sulphur Creek, came in good for 15 bbls. at 235 feet below the Pencil Cave. No. 2, completed in November, made 100 bbls. at the same depth below the cave. Upon completion of the second well, the Paragon Development Co. laid a 3-mile line to the pool from Sulphur Creek.

In addition to opening this new territory in Cumberland County, there were good extensions of the Fannis Creek and Sulphur Creek pools, and the year closes with promise of much new work in the coming year.

Warren and Allen Counties

In Warren County, no new territory was opened, but there was steady progress in the development of the old pools and slight extensions of them. The most important of these extensions was T. A. Sheridan's well on Tract No. 3 of the Georgiana Davenport, in the western portion of the Davenport Pool. This farm had been tested previously and given up, but Sheridan's first well came in for 300 bbls. and was followed by a number of others drilled by this operator. His No. 1 on Tract No. 2 of this same farm made 1,000 bbls. naturally from the shallow Mississippian lime at about 480 feet and although over a year old, it is still flowing about 50 bbls. per day.

The Richpond Pool, south of Bowling Green, which opened strong in the first months of the year, seems to be pretty well drilled up and is now quiet.

The Rockfield and Gillispie pools, southwest of Bowling Green, which were features of last year, have shown little activity during the present year. No noteworthy wells have been reported from that section.

Allen County, during 1925, experienced the most inactive 12 months period in its history as an oil producing section. A number of producers were completed in or near the immediate vicinity of old pools; a new deep sand in the Frost Pool brought about substantially the redrilling of that pool; production dropped from 27,000 bbls. in January to 20,000 bbls. in December, forfeiting its place as second in Western Kentucky to Barren County.

Other Western Kentucky Counties

In Hopkins County, the Copper Flash Oil Co., which has been developing a pool near Nortonville, completed several wells during the year. Near Earlington, 4 miles south of Madisonville, the Western Kentucky Coal Co. drilled a deep test on its own land to 3,360 feet. At 2,205 feet a showing was found. The well was plugged back to this sand and shot in November. It was being cleaned out for a test at the close of the year.

Near Gaston, Meade County, a test came in dry; another with the same result was drilled near Leitchfield, Grayson County; and a test in southern Adair County found gas, but was abandoned. Two other tests have just been drilled in Adair County, in the Hopewell Field that had good oil showings, but were capped for the present. The work is being done by Haislet & Wood.

In Simpson County, the Lincoln Oil Producing Co. drilled a test on the Alex Smith tract, 1½ miles east of the Pugh wells, to 1,336 feet, 358 feet below the

No. 15 Sucker Rod Rotor with No. 1 Shock Absorber attached and No. 6 Polish Rod Grip.

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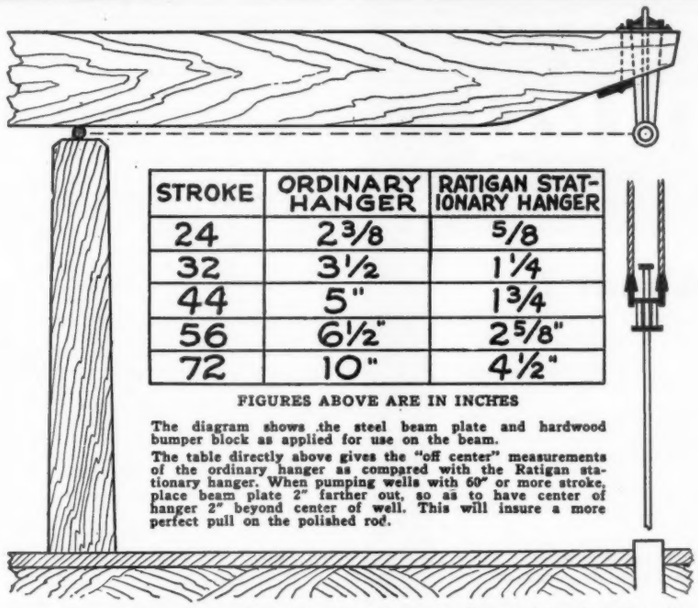

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The diagram shows the steel beam plate and hardwood bumper block as applied for use on the beam.

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black shale, and drew a blank. This was possibly the deepest well drilled in the western portion of the State during the year.

Eastern Kentucky

Eastern Kentucky shows a distinct falling off all along the line during the year 1925. There were 548 completions of which 348 were oil wells, 116 dry holes and 84 were gas wells. The total initial output was 4,873 bbls. an average of a little better than 12 bbls. per well. Compared with 1924, this shows 88 less completions, 181 fewer oil wells, a decrease of 6,073 bbls. in production, 53 more dry holes and 40 more gas wells.

In February, the largest sale of oil property ever made in the State was closed when the Swiss Oil Corp. closed for the properties of the Union Gas & Oil Co. in the North Weir Field of Lawrence and Johnson Counties, consisting of 17,000 acres with 623 wells for a consideration said to be $6,000,000. In the same district, the Garrison & Townsend interests sold a half interest in their production of 250 bbls. per day for a reported consideration of $250,000.

Lawrence-Johnson Counties

Throughout the year the Weir Field of Lawrence and Johnson Counties held the lead in production. No new pools or important extensions developed in this section during the year. Johnson and Magoffin Counties followed as second in production with the Lee-Owsley Counties Field, third. In these pools, as in the North Weir Field, nothing of note marked the year, new work being limited to the development of proven areas.

W. E. Swartz acquired several tracts of promising acreage in Elliott County, east of the Union Gas & Oil Co.'s properties, and attempted to extend this prolific pool. In November, he drilled his first test on the J. H. Ferguson, 4 miles east of the Union wells, at the head of Blaine Creek, and got a dry hole in the Weir sand at 946 feet; in the same month J. W. McDonald drilled 4 miles north of the Union wells, near Fairview School, which was also a duster in the Weir at 746 feet. Other tests will follow, however, as geological conditions, as reported by J. S. Hudnall, of the State Geological Survey, are good.

In Morgan County, in the same section of the Weir Field, a number of tests were drilled for the Weir sand, none of them successful.

At Summit, near Ashland, in Boyd County, a well was drilled which found production in the Corniferous sand. This was completed in June, and was followed by some leasing, but no further tests have been reported.

Late in 1924, the Henry Oil Co. drilled a well in the Big Neck of Owsley County on Buffalo Creek, where Perry, Clay, Breathitt and Oswley Counties join. The well is 18 miles from the Idamay Pool and got its pay from the Maxon sand. This was followed by additional wells by the Henry company and others in the neighborhood. No. 3 of the Henry Oil Co., its latest completion, made 15 bbls. from 20 feet of Maxon sand at 1,118 feet. In December Grace & Eaton drilled in a producer on the Burns farm with a reported production of 20 bbls. from the Maxon sand at 1,153 feet, extending this new area a quarter of a mile south of the Henry wells.

Wayne County

In the Burfield district of Wayne County, C. E. Daugherty got a well on the Burnett farm, good for 100 bbls. at 700 feet from the Beaver sand which extended production a quarter of a mile to the southwest. Other wells on this farm proved to be fair pumpers. Nothing further of importance was reported from this county.

Tennessee

In Tennessee, 58 wells were completed during 1925 with an initial yield of 4,221 bbls. Of these 19 were oil wells, 4 were gassers and 35 were dry holes; an increase over 1924 of 30 completions, 3,022 bbls. initial production, 16 dry holes and 4 gas wells.

Tinsley Bottom Pool

The last month of the year showed the largest producer ever completed in the State of Tennessee, when Dafoe and associates brought in their No. 7 Hamp Lynn, good for 1,500 bbls. naturally at a total depth of 459 feet, 152 feet below the Pencil Cave. Two days later Clark & Garretson finished a test on the J. M. Grey farm, 7 miles north of Tinsley's Bottom, near Celina, the county seat of Clay. This well is said to have made 100 bbls. per hour when brought in, but was pinched down and allowed to fill the limited storage on the lease. The Upper Sunnybrook sand at 210 feet and the Lower Sunnybrook at 287 feet both had good showings of oil; the Pencil Cave was found at 300 feet and the big pay was found at a few feet below it.

There were 41 completions during the year in Clay and Jackson Counties, 13 of them were producers with a flush production of 4,098 bbls., 26 were dry holes and 2 were gas wells.

As now developed, the Tinsley Bottom Pool covers an area of approximately 1 square mile. While tests outside of the present pool have been discouraging, it is not impossible that it is more extensive than the present limits. No drilling has yet been done southwest of the pool, which, from present indications, appears to be the direction the pool will take.

The construction of the Stoll Oil Refining Co.'s pipe line from the Tinsley Bottom Pool to Windle on the Tennessee Central Railroad was perhaps the most important thing happening this year in the Volunteer State, for the pool is in an isolated district, and although river shipment was tried, it was not satisfactory. The line is 18 miles long and consists of 2 and 3-inch pipe. It was started in August and completed in October.

Morgan County

The Sunbright Pool in Morgan County, Tennessee, is 6 miles south of the old Glenmary Pool, in Scott County. The first well in the pool was brought in in October, 1924. Five wells were drilled in 1925 by the Russell Producing Co. of Cincinnati, Ohio, all of them producers. The pay is found at about 1,500 feet in the Mississippian lime. The wells run in initial yield from 3 to 50 bbls. The oil is piped through a 2-inch line owned by the Russell company, to Huffman on the C. N. O. & T. P. Railroad.

At Glades Store, 5 miles west of the Sunbright Pool, a well was drilled by Knoxville parties that had an excellent showing in the Mississippian formation and was reported ruined by the shot. No. 2 is now being drilled.

Aside from these pools, there were 12 tests drilled in Tennessee, two of them were reported gas wells, the remainder were abandoned.

Mississippi

Mississippi enthusiasts were greatly encouraged in their belief that oil would be found in that State by the discovery of the Urania Field, LaSalle Parish, Louisiana, 60 miles from the Mississippi State line. Most interest centers in the area near Jackson, where the United State Geological Survey has mapped a large structure. The Finkbine Lumber Co. drilled two tests on its own lands in southeastern Rankin County. No. 1 was abandoned at 3,600 feet, although there were showings of oil and gas. No. 2 made a small amount of 42 gravity oil, probably from the Upper Cretaceous formation. Near Holly Springs in Marshall County, T. B. Slick drilled a test to 2,300 feet and on account of encountering a hard boulder at that depth the well was abandoned and the rig moved to No. 2 location, 100 feet away. This test is still drilling. Mr. Slick may carry this test to 4,000 feet. Other tests that are being watched are the Willis at Yazoo City, reported drilling in the Ripley formation, and which was said to have had a showing of oil and gas at 2,400 feet, and the Reeder well on the Insane Hospital land, north of Jackson, in Section 25-6-1, Hinds County.

During the year nine tests were reported as complete or abandoned in Mississippi, none of which found oil in commercial quantities, but in some of which showings of oil and gas were sufficient to encourage further tests. Large tracts of land are under lease to major com-

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Nothing From Alabama or Georgia

The year shows nothing done in the way of oil development in Alabama or Georgia, two States which have hoped to get in the producing columns, and where there have been several tests drilled in the past.

Prospects For 1926

The year in Kentucky brought little in the way of new territory opened, and with prices of crude at present levels, little improvement seems imminent.

For 1926 work in the Blue Grass State depends directly upon the crude market, for the wells are generally small and, taken as a whole, are not more than paying their way at present prices.

Cumberland County produced some big wells during the last months of the year. These have been in the northeastern part of the county on structures that seem to run into southern Adair County, and from work that is now planned it is safe to say that there well be quite a drilling campaign in northern Cumberland and southern Adair.

The Owensboro district, at the close of the year, looks very interesting. There are 11 outlying tests drilling in the district now and the Midkiff Pool has just been opened showing that the trend of the field is to the south, which will mean the testing out of a large acreage in that direction.

In Southeastern Kentucky, Rockcastle and Knox are in for a play. The Broadhead test in the former county may have opened a pool, and in the latter county a map just published by the Kentucky Geological Survey shows structures that have caused considerable leasing. In Laurel County, the Standard Oil Co.'s wildcat, 10 miles southwest of London, is showing for a commercial producer at 710 feet and is causing much speculation in leases. A number of independent companies have already stated that they will do some test work in Laurel in 1926. Prospecting is going forward in southern Lee and Owsley Counties, and there is new drilling near the Henry company's wells in Clay County.

On the whole, it looks as if Kentucky will do well to hold its production to 1925 figures. The Owensboro Field will hardly do more than take care of the slump that is occurring in Warren and Allen Counties. Barren may keep its stride. Cumberland County will have the big play with large flush production wells and will probably lead the State in new production in 1926. The Coming year for Eastern Kentucky does not look as bright as the past year did at its beginning. One may conclude, therefore, that figures for the coming year will show no marked change either for better or for worse.

COMMERCIAL DIRIGIBLES ARE AWAITING HELIUM

(Continued from Page 134)

the kind of business than can be made profitable by being entered into by a single natural gas company. It calls for a large undertaking which must be founded upon a knowledge, nation-wide, of the helium content of all the natural gas available. Only a company based upon such wide knowledge could prepare itself to contract to furnish this inflating gas for the purpose of a manufacturer of dirigible balloons. To inspire confidence in the men who must put up the necessary funds such a company must be able to offer full information. It would be necessary to inspire confidence just as it has been necessary to inspire confidence for the conversion of coal-burning plants into fuel oil burning plants by well substantiated assurances that there would be an abundant supply for all reasonable purposes. The greatest possible impetus would be given to enterprising men if they could know today the vast amounts of helium gas that are being wasted as well as the location of the gas wells and their helium content that would be available for exploitation once the necessary machinery has been provided for a helium gas industry.

If the helium gas of this country were being conserved by this policy of secrecy for the benefit of national defense, patriotism would suggest a sacrifice of every commercial advantage by allowing this helium gas to remain in the ground for that purpose. The fact is this gas is being dissipated in the air and serves no useful purpose whatever, because it is an actual detriment to the quality of the natural gas in which it is contained. This natural gas, both for power and illuminating purposes, and even for the production of casinghead gasoline, would be better without its helium content.

No foreign purpose could be served by placing such helium gas on the market because the law forbids its exportation for any purpose. Therefore commercial production could not assist any foreign government in any possible war purpose against the United States or anyone else.

The only possible logical reason for the secrecy maintained respecting the location of helium gas-producing wells is one that has been given by Government officials who hold these secrets of the natural gas-producing industry. This is that the Government desires to purchase the best helium gas fields before it permits the owners of those fields to know the extent of this valuable product that they really own. The essential purpose of the Government in this respect could be accomplished by contracting for what they need at a fair price to be offered the natural gas companies after those companies have a knowledge of what they own just as the Government contracts for or purchases in the open market thousands of other articles it needs, both for the purposes of war and peace.

Unknown Wealth

No one can tell under this condition of secreted information what vast wealth the natural gas companies possess in the helium content of the product of their wells. Until they are permitted to have the advantage of knowing the value of this helium and until some commercial enterprise is able to utilize that gas, it will continue to be wasted to the extent of millions of cubic feet very month. How many million cubic feet is being wasted cannot be told until the information is made public. If the natural gas industry as a whole really understood the wastefulness of which it is guilty through no fault of its own it might join to forces in encouraging some great company to develop this wasted wealth.

The Canadian Government has undertaken to conserve its helium gas supply by preserving in an undeveloped condition certain natural gas fields. The best helium content known to exist in any Canadian natural gas field is .33 per cent, whereas in the United States there is a vast amount of natural gas containing 5 and 10 times that amount of helium. In our case there is no effort to preserve these fields undeveloped. The owners are removing the natural gas without any restriction whatever so that no element of conservation is applied in our handling of this problem. Helium experts have long recognized the wisdom of a policy for the conservation of helium by the storage of this helium gas by inflating dirigible balloons. Any methods of storage such as are applied to artificial gas is regarded as quite impracticable if attempted on a large scale, because of the immense cost of providing such gas storage plants. On the other hand from the inception of the industry in this country the suggestion has been made that if the helium gas could be extracted and used for commercial dirigible purposes it would be as safely cared for as by any other method and if at any time it should be needed for the purpose of national defense it could be commandeered forthwith. It has been pointed out that the development of a dirigible balloon industry for commercial purposes would result in the storage in the air of many millions of cubic feet of this rare, inflammable gas for the Government.

Of course, it is understood, that there would be no toleration in this country of any dirigible balloon industry being projected with any inflating gas except

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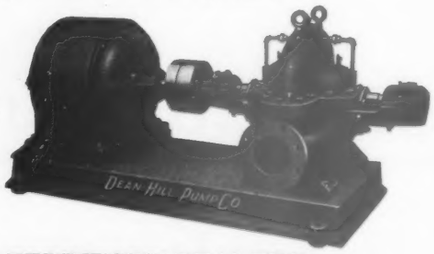

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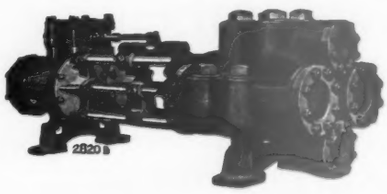

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helium because of the tremendous hazard that would accompany such a course.

At this time when the conservation of natural resources is the subject of so much discussion it seems eminently proper that this waste of helium gas should not be permitted. It cannot be considered that the permanent policy of the Government has yet been determined in this respect. That policy is now under consideration and some definite determination probably will be announced in the not distant future.

BRITISH CRUDE AND GAS OIL IMPORTS

(Continued from Page 134)

£8,840,000, which figures represents but a fraction of the values of the refined products extracted from the crude.

During 1923, crude oil was received to the extent of 334,617,596 gallons and was valued at £5,269,791, while the total quantities of refined products received (including fuel oil) amounted to 990,491,125 gallons, and were valued at £29,692,139.

During 1923 receipts of illuminating oil were greater than either in 1924 or 1925, and amounted to 144,128,501 gallons, while those of fuel oil were 363,738,123 gallons, or an amount nearly 50,000,000 gallons in excess of last year's fuel oil receipts. During 1923, also, Great Britain imported 327,233,670 gallons of motor spirit and 82,222,696 gallons of lubricating oils.

According to the official returns of petroleum imports and exports during 1925 of the United Kingdom, the total quantities of petroleum sent abroad during the year were:

Illuminating oil	10,127,469	£ 254,398
Motor spirit	46,296,273	2,422,428
Lubricating oil	1,703,369	180,928
Gas oil	1,695,192	33,537
Fuel oil	3,115,506	57,694
Other sorts	30,336	3,856
Total	62,968,142	£2,952,841

During 1924 the total quantities exported amounted to 58,656,046, and the values were returned at £2,884,639. During last year 252,178,073 gallons of fuel oil were shipped for the use of steamers engaged in foreign trade, a quantity which compared with 251,967,059 gallons for the preceding 12 months.

During 1925 the United Kingdom received from overseas 1,241,528 hundredweights of paraffin wax, valued at £1,690,016, as compared with an import of 1,366,567 hundredweights in 1924, valued at £1,700,133.

FOREIGN OIL AT SEABOARD REFINERIES

(Continued from Page 130)

at what the Bureau of Mines designates as the East Coast, the Texas Gulf Coast and the Louisiana Gulf Coast refining areas. In a general sense these refining areas are also "receiving" areas for imports of crude and refined oils.

Therefore, line 2 really represents the total imports of crude and refined products received by these three areas—and line 3 really represents the imports of crude oil received by these three areas.

In order to show, during the last three years the total crude oil produced in Mexico and the total imports into the United States in their relation to the foreign oil and the domestic oil run to stills in these three "seaboard" areas, lines 4 and 5 are shown on Graph 1.

Comparing lines 1, 2, 3 and 5 we see at a glance the relation between Mexican total production, our total imports, the imports of Mexican crude and the foreign crude run to stills, month by month, in 1923, 1924 and 1925.

Outstanding Fact

The outstanding fact of this comparison is that while production, total imports and crude imports have been dropping for three years, the amount of foreign crude run to stills has remained about constant.

As previously stated, the runs to stills of domestic crude increased 60,000,000 bbls. in 1924 over 1923—and about 97,000,000 bbls. in 1925 over 1924. This general increase for the United States as a whole is partially, but not pro-

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portionately reflected in the increased runs of domestic crude at the refineries on the East Coast, the Texas Gulf Coast and the Louisiana Gulf Coast, as shown by line 4, Graph 1.

In other words, the refineries in these three areas increased their runs of domestic crude during the last three years—and "sat tight" on their runs of foreign crude (line 5).

The "break up" of lines 4 and 5 in Graph 1 is extremely interesting as shown in Graph 2.

In 1923, the East Coast refineries run about 94,000,000 bbls. of domestic crude and over 22,000,000 bbls. of foreign crude. About 19.4 per cent of their crude runs was foreign crude. In 1924, they ran about 109,000,000 bbls. of domestic crude and over 25,000,000 bbls. of foreign crude 19.0 per cent of their runs was foreign crude. In the first 11 months of 1925 this area ran 97,000,,000 bbls. of domestic crude and almost 22,000,000 bbls. of foreign crude—18.5 per cent of their crude runs was foreign crude.

Change Very Slight

As the East Coast area, during the last three years, has been the great "absorber" of California oil, the very slight change in the ratio between the runs of domestic and foreign oil, over this particularly trying three-year period, comes as something of a surprise.

In 1923 the refineries in the Texas Gulf Coast area ran over 68,000,000 bbls. of domestic crude and over 12,000,000 bbls. of foreign crude—15.5 per cent of their crude runs was foreign crude. In 1924 they ran about 83,000,000 bbls. of domestic crude and 11,000,000 bbls. of foreign crude—11.8 per cent was foreign. In the first 11 months of 1925 they ran over 91,000,000 bbls. of domestic and 7,000,000 bbls. of foreign crude—7.1 per cent was foreign.

And, on the Louisiana Gulf Coast, in 1923, the refineries ran 24,000,000 bbls. of domestic and over 7,000,000 bbls. of foreign crude to stills. About 23.8 per cent of their crude runs was foreign crude. In 1924 they ran over 27,000,000 bbls. of domestic and 9,000,000 bbls. of foreign crude—24.7 per cent of their crude runs was foreign crude. In the first 11 months of 1925 they ran 37,000,000 bbls. of domestic crude and well over 9,000,000 bbls. of foreign crude—20.6 per cent was foreign.

Areas Compared

Comparing the East Coast area, the Texas Gulf Coast area and the Louisiana Gulf Coast area, during the last three years, we find only a very slight drop in the percentage of foreign crude run by East Coast refineries—a slightly larger drop in the percentage run by Louisiana Gulf Coast refineries—and a very substantial drop in the percentage run by Texas Gulf Coast refineries.

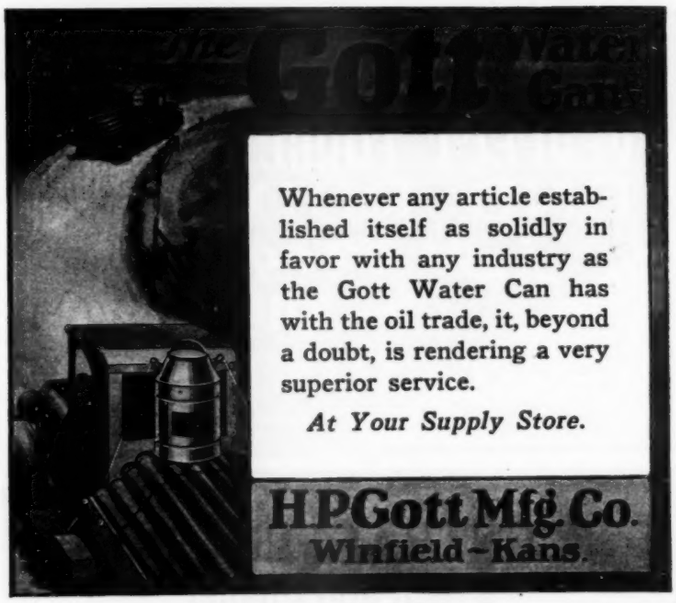
From 1923 to 1925 the percentage of foreign crude run at East Coast refineries dropped from 19.4 per cent to 18.5—the Louisiana Gulf Coast dropped from 23.8 per cent to 20.6—and the Texas Gulf Coast dropped from 15.5 to 7.1 per cent.

Adding these three seaboard areas together we find that in 1923 they ran about 188,000,000 bbls. of domestic crude and about 43,000,000 bbls. of foreign crude—about 18.6 per cent was foreign. In 1924 they ran about 219,000,000 bbls. of domestic crude and over 45,000,000 bbls. of foreign crude—17.3 per cent was foreign crude. And in the first 11 months of 1925 they ran over 225,000,000 bbls. of domestic crude and over 38,000,000 bbls. of foreign crude. About 14.5 per cent of the crude runs was foreign crude.

Where Increase Was

The increase in 1924, over 1923, in the domestic crude run to stills, in the entire United States, was about 60,000,000 bbls. Increase in the domestic crude run to still in these three seaboard areas was about 31,000,000 bbls.—therefore the seven other refining areas (Pennsylvania, Indiana-Illinois, Kansas-Oklahoma, North and Central Texas, Arkansas-North Louisiana, Rocky Mountain and California) showed a combined increase of 29,000,000 bbls. in their runs of domestic crude.

It is rather interesting to note that,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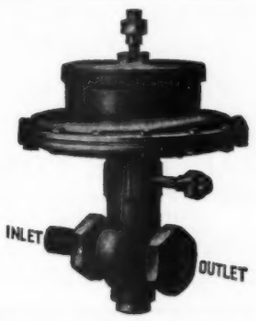

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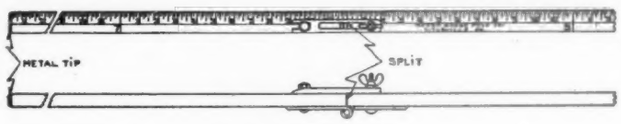

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in 1924, these three seaboard areas increased their runs of domestic oil 31,000,000 bbls., as against 29,000,000 bbls. for all of the rest of the United States.

Estimating the full year 1925 on the basis of the first 11 months we have an increase, over 1924, of about 97,000,000 bbls. in the domestic crude run to stills in the entire United States. Of this increase the three seaboard areas contributed about 27,000,000 bbls., while the other refining areas contributed about 70,000,000 bbls.

As there has been almost no change in the amount of foreign crude runs to stills in the 1923-1925 period, this rapid swing in the proportion of the increase in the runs of domestic oil, from 31,000,000 bbls. at seaboard refineries and 29,000,000 bbls. at all other refineries in 1924 to about 27,000,000 bbls. at seaboard refineries and 70,000,000 bbls. at all other refineries in 1925, is amazing—to say the least.

CHRONOLOGY OF 1925 CRUDE OIL PRICES

(Continued from Page 128)

July 21.—Ohio Oil Co. posted a price of $1.70 for Artesia, N. M. crude.

August 1.—The Midwest Refining Co. placed the Salt Creek, Wyo., crude on a gravity basis, posting the following prices: 29 to 29.9 degrees, $1.48; 30 to 30.9, $1.56; 31 to 31.9, $1.64; 32 to 32.9, $1.72; 33 to 33.9, $1.80; 34 to 34.9, $1.88; 35 to 35.9, $1.96; 36 to 36.9, $2.04; 37 and above, $2.12.

August 3.—Humble Oil & Refining Co., the Gulf Production Co. and The Texas Co. advance Grade A and Grade B Gulf Coast crude 25 cents.

August 7.—Standard Oil Co. of Louisiana reduced the price of Bellevue crude 25 cents a bbl.

August 11.—Joseph Seep Purchasing Agency reduced the price of all Pennsylvania crude oil 25 cents.

August 15.—Humble Oil & Refining Co. reduced the price of North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie and Moran crudes from 5 to 37 cents on all grades. Champlin Refining Co. eliminated its three highest gravity classifications for Garber, including them under one grade, 44 and above. This is a reduction of 8 cents for the 45 to 45.9 gravity; 16 cents for the 46 to 46.9 gravity, and 24 cents for crude of 47 degrees and above.

August 17.—Joseph Seep Purchasing Agency reduced the price of all Pennsylvania crude 25 cents a bbl.; Cabell, Somerset medium and Somerset light, 15 cents, and Ragland, 10 cents. Paragon Development Co. reduced the price of Barren, Cumberland and Monroe County, Kentucky, crudes 25 cents.

August 18.—Magnolia Petroleum Co. reduced the price of North and Central Texas crude from 11 to 37 cents on all grades above 31 degrees, following the schedule adopted by the Humble Oil & Refining Co. on August 15. The two lower grades, below 28 and 28 to 30.9, were unchanged. Joseph Seep Purchasing Agency reduced the price of Pennsylvania grade oil in Buckeye pipe lines, 25 cents a bbl.

August 19.—Joseph Seep Purchasing Agency reduced crude 45 cents.

August 21.—Ohio Oil Co. reduced Lima and Wooster crudes 10 cents. The Texas Co. adopted the Humble Oil & Refining Co. schedule in Oklahoma and Texas, reducing crude from 11 to 37 cents. Canadian crudes were reduced 10 cents.

August 26.—Magnolia Petroleum Co. reduced Oklahoma and Kansas crudes 11 to 37 cents, except two lower grades, to conform with Texas changes of August 18.

August 27.—Standard Oil Co. of Louisiana reduced all Arkansas and Louisiana crude 25 cents, except Smackover, Bellevue and Cotton Valley. Prairie Oil & Gas Co. reduced Oklahoma, Kansas and North Texas crude 25 cents each grade. The reduction was followed by the Sinclair Crude Oil Purchasing Co., the Gypsy Oil Co. and other companies except those which previously had followed

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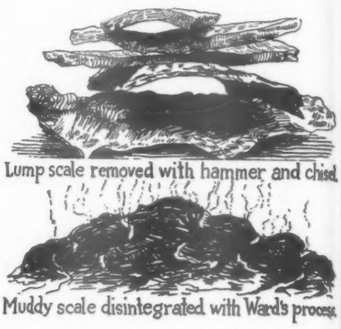

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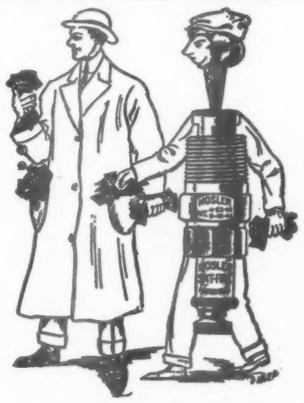

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the reduction of the Humble Oil & Refining Co. in Texas. Louisiana reductions were met by all companies. Atlantic Oil Producing Co. combined Smackover crude below 24 gravity under one grade and posted a price of 85 cents. All grades above 27 gravity were combined under the one grade 27 and above with a price of $1.35.

August 28.—Standard Oil Co. of Louisiana adjusted prices of its crude by advancing Caddo crude below 32 degrees, and Homer, Haynesville and El Dorado crudes 5 cents a bbl. Smackover crudes above 25 degrees were reduced 5 cents. Elk Basin, Grass Creek light, Big Muddy, Lance Creek, Rock Creek, Mule Creek, Greybull-Torchlight, Hamilton Dome and Osage, Wyo., and Hogback and Artesia, N. M., crudes reduced 25 cents. Grass Creek heavy crude posted at 90 cents. Ohio Oil Co. reduced Lima, Indiana, Illinois, Princeton, Plymouth, Waterloo and Wooster crudes 25 cents. Imperial Oil Co., Ltd., reduced Oil Springs and Petrolia, Canada, crudes 25 cents. Western Kentucky crudes were cut 25 cents each grade. Atlantic Oil Producing Co. reduced Stephens, Ark., crude 15 cents, and all grades Smackover crude above 25 gravity 5 cents. It advanced Homer and Haynesville crudes 5 cents. Canadian crudes reduced 25 cents.

August 29.—Joseph Seep Purchasing Agency reduced all Pennsylvania crudes, except in Buckeye Pipe Lines, 25 cents. Buckeye crude was cut 20 cents. Cabell, Somerset light and medium, and Ragland crudes were cut 10 cents. Paragon Development Co. reduced Cumberland, Monroe and Barren County, Kentucky, crudes 10 cents. Magnolia Petroleum Co. posted a price of $1.15 for Iatan, Texas, crude.

August 31.—Atlantic Oil Producing Co. reduced Stephens, Ark., crude 15 cents. The Texas Co. advanced Caddo crude below 32 gravity 5 cents.

September 1.—The Texas Co. adopted the Prairie Oil & Gas Co. prices in Oklahoma, and Standard Oil Co. of Louisiana scale in Smackover, Ark. Magnolia Petroleum Co. adopted the Prairie Oil & Gas Co. crude schedule in Oklahoma and Kansas.

September 10.—Producers & Refiners Corp. reduced the price of Lost Soldier, Wyo., crude 25 cents.

September 22.—Standard Oil Co. of California announced new scale of prices for each California Field in which it purchases crude. New schedule involves reductions in most grades as high as 49 cents. Crude of 33 degrees gravity, of Midway, Sunset, Elk Hills, Lost Hills and Belridge Fields was advanced 4 cents, and 34 degrees gravity crude in Lost Hills and Belridge was advanced 8 cents.

October 12.—Ohio Oil Co. reduced the price of Artesia, N. Mex., crude oil 10 cents.

October 14.—Joseph Seep Purchasing Agency reduced the price of Cabell, Somerset light and Somerset medium crude 15 cents, and Ragland crude 10 cents. Paragon Development Co. reduced Cumberland, Monroe and Barren County, Kentucky, crude 15 cents. Ohio Oil Co. reduced Indiana crude 10 cents.

October 17.—Indiana Refining Co. reduced western Kentucky crude 10 cents.

October 27.—Standard Oil Co. of California reduced the heavier grades of all California crude from 1 to 15 cents, the grades and reductions varying according to the various fields.

November 1.—Prairie Oil & Gas Co. announced it would buy crude under 28 gravity on a basis of an 8-cent reduction for each degree of crude under 28 gravity. This applies only to crude run from connections in effect November 1. The official minimum posting remains 28 to 28.9 gravity.

November 21.—Humble Oil & Refining Co. posted a price of $1.07 for crude below 28 degrees gravity and adopted the schedule of the Prairie Oil & Gas Co. for crude above 28 degrees.

November 23.—Magnolia Petroleum Co. posted a price of $1.07 for crude below 28 degrees gravity in Texas, Oklahoma and Kansas, and adopted the schedule of the Prairie Oil & Gas Co. This change affects only crude below 31 de-

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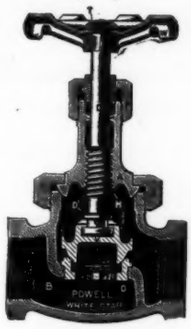
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grees in Oklahoma and Kansas. The Texas Co. revised its schedule to meet the Humble Oil & Refining Co. and Magnolia Petroleum Co. changes. Joseph Seep Purchasing Agency advanced the price of Pennsylvania grade crudes 25 cents; Somerset medium and Somerset light, 15 cents, and Ragland 10 cents. Magnolia Petroleum Co. advanced Corsicana heavy crude 5 cents. Paragon Development Co. advanced Cumberland, Barren and Monroe County, Kentucky, crude 15 cents. Magnolia Petroleum Co. advanced Mirando City, Thrall and Luling crudes 5 cents.

November 30.—Joseph Seep Purchasing Agency advanced Ragland crude 5 cents.

December 10.—Ohio Oil Co. reduced Sunburst, Mont., crude 20 cents.

December 11.—Corning crude advanced 15 cents.

December 12.—Joseph Seep Purchasing Agency advanced all Pennsylvania grade crudes 25 cents.

REFINERY PRICES HIGHER IN 1925

(Continued from Page 125)

production in California. Much of this heavy oil has been used as fuel without refining. Even when refined it yields a large percentage of fuel oil.

Despite this increased supply, however, average fuel oil prices were higher in 1925 than in 1924 in all areas. This includes California although prices there, due to the heavy production, were reduced the latter part of the year. The average tidewater price there, the first six months of 1925 was $1.5344 but, due to the reductions, the average for the last half of the year was $1.2154, resulting in an average of $1.4068 for the year. The bulk of the fuel oil accumulation during the past 18 months has been on the West Coast and these heavy stocks coupled with a continued heavy production forced substantial price reductions.

This surplus fuel oil in California had some effect on the eastern market especially in the coastal areas where the California product is available. The Smackover output has also had wide distribution along the Gulf and East Coasts. Due to this situation the bunker grades were generally from 10 to 15 cents lower at the close of the year than at the start. All factors considered, however, the fuel oil market has held up remarkably well.

This has been due not only to the increased demand for the heavy fuels but also the fact that modern refinery methods, including cracking, have made possible the securing of more and more gasoline and other light end products from the heavy crudes. Major oil companies who two or three years ago would have been willing to dispose of the heavy crudes with little regard to price are now refusing to sell their output except at prices in line with its additional potential value.

The interior fuel oil market centering in the Middle West is largely dominated by conditions in the Mid-Continent Field. There the flood of heavy Smackover crude production has been felt in the fuel oil market. However, as shown in the accompanying tables, the average prices in 1925 were higher in all areas than in 1924 or 1923. The Smackover development no doubt prevented still higher prices. In Oklahoma, the average price on 24-26 fuel oil was $1.0908 per bbl. last year, $.954 in 1924 and $.9511 in 1923.

Even in Arkansas, refinery fuel oil prices were higher in 1925 than in the previous two years. Mid-Continent refiners especially in Oklahoma, Kansas and North Texas, have made tremendous strides in refinery efficiency. Based on the Bureau of Mines report, Oklahoma and Kansas refiners increased their gasoline recovery from crude approximately 4 per cent during the past year. This increased recovery has naturally meant less fuel oil residuum in plant operation. This decrease in the percentage of fuel

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oil output was an important factor in preventing a collapse in the fuel oil market during the past year.

Lubricating Oils

Average prices on lubricants for the past year have shown little change. Bright stocks were higher in 1925 than in 1924 both in Pennsylvania and the Mid-Continent. The neutral oils showed little change, some grades in fact being less in 1925 than the previous two years. The demand has increased but price advances have not materialized owing to the increased output.

In Pennsylvania the average price on Pennsylvania Bright Stock last year was 38.24, an increase from 36.44 cents in 1924 and 33.37 cents in 1923. In the Mid-Continent a representative grade of Bright Stock brought 30.52 cents in 1925, 27.9 cents in 1924 and 26.42 cents in 1923.

Wax Prices Higher

Wax, which experienced a sensational price advance in 1924, continued strong in 1925. In Oklahoma 124-126 wax brought an average price of 5.16 cents in 1925, 4.46 cents in 1924 and 2.54 cents in 1923. In the New York export market the average price for 120-122 wax was 6.12 cents in 1925, 5.26 cents in 1924 and 3.25 cents in 1923. The higher prices are due to steady increase in both the export and domestic demand.

Senators Repudiate Couzens' Allegations On Oil Corporations

By Charles E. Kern

WASHINGTON, D. C., Feb. 15.—Senators Ernst of Kentucky and Watson of Indiana today presented to the Senate a minority report from the select committee on investigation of the Bureau of Internal Revenue severely criticizing the Couzens report on the investigation held by the committee into the affairs of the Bureau. Senators Ernst and Watson declare that this majority report was based to a large extent upon ex parte proceedings and that it represents only one side of the case. The report shows that most of the allegations made by the majority were upon charges that neither Senator Ernst, Senator Watson nor the Bureau of Internal Revenue had any opportunity to examine or reply to.

This report shows that the majority grossly misstated the facts it referred to in oil and gas discovery depletion regulations which had been approved when Secretary Glass was at the head of the Treasury Department.

Specific false statements are shown in respect to the Gulf Oil Corp., the Gypsy Oil Corp. and the Black and Simons case. It is pointed out that this majority report was sent to the country and made the basis for prejudicial and untrue statements in the newspapers without an opportunity for the minority to rebut the untruths that were broadcast about a month ago.

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Mississippi House Bill No. 321 is an act to encourage drilling for oil and gas and for other purposes. All wells drilled in the State for the purpose of developing oil or gas, within two years would be exempt from taxes of every description and kind, and the oil and gas produced from such wells exempt from taxes for a further period of two years. All engines, boilers, derricks, drills, tools and machinery used in and about the drilling of an oil well or wells in the State shall be exempt from taxes for a period of two years.

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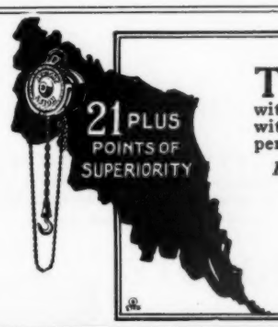

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COLOMBIA GOVERNMENT CANCELS CONCESSION

According to a dispatch from Bogota, the Colombian Government has taken over by a presidential decree the Barco oil concession of 1,200,000 acres on the Venezuelan frontier, in the region of Lake Maracaibo.

A break of more than 7 points in Carib Syndicate stock, to 14½, was occasioned by the report. Carib has a 25 per cent interest in the concession. The remaining 75 per cent is held by the Colombian Petroleum Co. (Doherty interests), which early this year gave an option on this holding to the Gulf Oil Corp. According to information received by Gulf Oil, the Colombian Minister of Industry on February 3 dictated a resolution, with the approval of the president, canceling the Barco concession on the grounds that the provisions of the concession had not been lived up to.

The concession was granted Barco in 1905 with the provision that within a year he file a geological map and start development work within three years. All of these requirements, it is said, were lived up to and further that when the property was transferred in 1918 to the present owners the Colombian government then recognized the concession as being in full force.

In the view of the Gulf Corp. it is difficult to understand how the Government can now say that provisions of the concession were not fulfilled in 1906 and 1908, when the Government recognized the concession being in force in 1918. The whole matter now goes from the hands of the ministry into the Colombian courts for adjudication, if the action of the Minister of Industry, seeking to cancel the lease is carried through.

The Gulf's option on the 75 per cent interest in Barco was made on January 2 with a cash payment. It has until some time later to make the second payment and exercise the option. The proposal of the Government to seek cancellation of the lease had been mooted for some months prior to the Gulf making the trade with the Doherty interests for the 75 per cent of Barco.

Carib Syndicate has other large holdings in Colombia and is understood to have made arrangements with New York bankers for sale of its interest in one of these concessions. It is also negotiating for the purchase of fee lands in Colombia amounting to more than 1,000,000 acres.

READ THE
Classified Ads
Pages 216-217
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F. H. EMIG RESIGNS

F. H. Emig, who for the past year has been manager of the collective buying department of the National Petroleum Marketers Association, has resigned effective February 15. Weston Atwood, formerly general manager of the De Leon Pipe Line & Refining Co. at De Leon, Tex., will succeed Mr. Emig. Mr. Atwood joined the association's staff the first of the year.

JOHN WALKER BOLLES DIES

John Walker Bolles, for many years general manager of the Standard Oil interests in the Orient, died at his home in Wilmington, N. C. Mr. Bolles was born in Wilmington, August 17, 1855.

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All-Steel Drilling Rigs (See Rigs)

Aluminum Bronze Powder For Paint—
Aluminum Co. of America.

Ammonia—
Mathieson Alkali Works, Inc.

Ammonia Compressors (See Compressors—Ammonia)—

Anchor Clamps (See Clamps)—

Antimonial Lead—
Eagle Picher Lead Co.

Apparatus—Electric—
Westinghouse Electric & Mfg. Co.

Apparatus—Meter Control—
Westinghouse Electric & Mfg. Co.

Appraisers—
American Appraisal Co.

Automatic Screw Cutting Die Heads (See Die Heads)—

B

Babbitts—
Eagle-Picher Lead Co.
Ryerson, Jos. T. & Sons, Inc.

Back Up Tongs (See Tongs)—

Bailers—
Oil Well Supply Co.
Spang & Co.

Balls and Seats—
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Norris Brothers, Inc.
Northrup Equipment Co.

Balls—Bronze—
Atlas Ball Co.
Hoover Steel Ball Co.

Balls—Steel—
Atlas Ball Co.
Hoover Steel Ball Co.
Strom Steel Ball Co.

Band Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.

Barrels—
Columbian Steel Tank Co.
Petroleum Iron Works Co.

Batteries—
National Carbon Co.

Bearings—Roller—
American Roller Bearing Co.
Timken Roller Bearing Co.

Bearings—Thrust—
Timken Roller Bearing Co.

Belting—
Bridgeport Machine Co.
Fennwick-Redaway Mfg. Co.
Frick-Reid Supply Co.
Imperial Belting Co.
International Supply Co.
Lufkin Foundry & Machine Co.
Murray Rubber Co.
Stanley Belting Corp.

Belting—Rubber—
Bovaird Supply Co.
Goodyear Tire & Rubber Co.
United States Rubber Co.

Belt Lacing—
Flexible Steel Lacing Co.

Bits—Disc—
U. S. Tool Co.

Bits—Fish Tail—
Federal Supply Co.
Lucey Mfg. Corp.

Bits—Rotary Disc—
Hughes Tool Co.

Bits—Rotary Rock—
Hughes Tool Co.
Reed Roller Bit Co.

Bit Steel (See Steel—Bit)—

Bleaching Powder—
Mathieson Alkali Works, Inc.

Blow-off Valves (See Valves)—

Blowout Preventer—
Regan Forge & Engineering Co.
Stearns-Roger Mfg. Co.

Blowpipes—
Oxweld Acetylene Co.

Boiler Feed Pumps (See Pumps)

Boilers—Horizontal Return Tubular—
Kewanee Boiler Co.
Vogt, Henry, Machine Co.

Boilers—Oil Country—
Bovaird & Seyfang Mfg. Co.
Bridgeport Machine Co.
Coatesville Boiler Works.
Continental Supply Co.
Donovan Boiler Works.
Frick-Reid Supply Co.
International Supply Co.
Kewanee Boiler Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Republic Supply Co.
Titusville Iron Works.

Bolted Tanks (See Tanks)—

Bolts and Nuts—
Sheffield Steel Corp.

Bolt Treading Die Heads (See Die Heads)—

Bolt Threading Machines—
Landis Machine Co.
Oster Mfg. Co.

Bottles—Glass
Illinois Glass Co.

Box and Pin Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Braces—Tool—
Dunn Mfg. Co.

Break Out Tongs (See Tongs)—

Briquetting Machines—
Simplex Equipment Co.

Bronze Valves (See Valves—Brass and Bronze)—

Buckets—
Columbian Steel Tank Co.

Buildings—Metal, Sectional (All Types)—
Austin Co.
Braden Co.
Butler Mfg. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Swartwout Co.
Truscon Steel Co.

Bulk Station Tanks (See Tanks)

Bull Ropes—
Ajax Rope Co., Inc.
Columbian Rope Co.
Wall Rope Works, Inc.

Bull Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.

Burners—Gas—
Okmulgee Boiler & Welding Works.

Burners—Oil—
Baker Motors, Inc.
Continental Supply Co.
Reid, Joseph, Gas Engine Co.

Bushings—Rotary Drive—
Wilson Oil Tools Corp.

C

Cable Bit Steel—
Andrews Steel Co.
Federal Supply Co.
Heppenstall Forge & Knife Co.

Cables—Drilling, Manila—
Ajax Rope Co., Inc.
Columbian Rope Co.
Frick-Reid Supply Co.
Wall Rope Works, Inc.

Cables—Steel—
Ajax Rope Co., Inc.
American Cable Co.
Black Steel & Wire Co.
Broderick & Bascom Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A. & Sons Rope Co.
Longhart Supply Co.
Murray Tool & Supply Co.
National Supply Co.
Republic Supply Co.
Wickwire-Spencer Steel Corp.

Calf Rope—
Ajax Rope Co., Inc.

Calf Wheels—Steel—
International Derrick & Equipment Co.
Moore, Lee C. & Co., Inc.

Cameras—Oil Field—
Braden Co.

Cans—Carrying—
Columbian Steel Tank Co.

Cans—Water—
Gott, H. P. Mfg. Co.

Capping Steel—
Andrews Steel Co.

Carbon—Black Diamond—
Diamond Drill Carbon Co.
Patrick, R. S.

Cars—Tank—
American Car & Foundry Co.
General American Tank Car Corp.
Shippers' Car Line, Inc.

Cars—Tank, Leased—
American Car & Foundry Co.
North American Car Co.
Shippers' Car Line, Inc.

Casing—
Bovaird Supply Co.
Continental Supply Co.
Jarecki Mfg. Co.
National Supply Co.
National Tube Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Casing—Wrought Iron—
Byers, A. M. Co.
Reading Iron Co.
South Chester Tube Co.

Casings Elevators (See Elevators, Casings and Tubing)—

Casinghead Gasoline Equipment—(See Natural Gasoline Plant Equipment)—

Casing Heads—
Dresser, S. R. Mfg. Co.
Kansas City Hay Press Co.
Oil Well Improvements Co.

Casing Lines—
Ajax Rope Co., Inc.

Casing Packers (See Packers)—

Casing Pulleys (See Pulleys)—

Casing Shoes—
Baker Casing Shoe Co.
Bartlesville Supply Co.
Bridgeport Machine Co.
Guiberson Corp.
Oil Well Supply Co.

Casing Tongs (See Tongs)—

Castings—Alloy Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Brass—
Progressive Brass Mfg. Co.

Castings—Chrome Nickel Steel—
Sivyer Steel Casting Co.

Castings—Corrosion Resisting Non Ferrous—
Hills-McCanna Co.

Castings—Electric Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Grey Iron—
Ajax Iron Works.
American Car & Foundry Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.

Castings—Steel—
Ajax Iron Works.
Chicago Steel Foundry Co.
Nugent Steel Casting Co.
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Cement—Fire and High Temperature—
Bothfield Refractories Co.

Cement—Portland—
Monarch Cement Co.

Centrifugal Pumps (See Pumps)—

Chain Pipe Tongs (See Tongs)—

Chains—Conveying—
Chain Belt Co.
Link-Belt Co.

Chains—Oil Well—
Chain Belt Co.
Link-Belt Co.
Lufkin Foundry & Machine Co.

Chains—Power Transmission—
Chain Belt Co.
Link-Belt Co.

Check Valves (See Valves)—

Chemical Glassware for Laboratory Use (See Glassware)—

Chemical Treatment Crude Oil Emulsion—
Barnickel, Wm. S. & Co.

Chemical Treatment of Water—
Ward Chemical Co.

Chlorine—Liquid—
Mathieson Alkali Works, Inc.

Chrome Nickel Steel Castings (See Castings)—

Circulating Heads—
Wilson Oil Tools Corp.

Clamps—Anchor—
Bartlesville Supply Co.

Clamps—Belt—
Federal Supply Co.

Clamps—Collar Leak—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Clamps—Hoisting—
Newton Process Mfg. Co.

Clamps—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Clamps—River—
Dresser, S. R. Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Cloths—Wiping—
Nye Tool & Machine Works

Clutches—Friction, Plate Type—
Twin Disc Clutch Co.

Cocks—Brass and Iron—
Lunkenheimer Co.
Walworth Mfg. Co.

Cocks—Plug—
Homestead Valve Mfg. Co.

Cocks—Water Gauge—
Smith Separator Co.

Coils and Bends—Pipe—
Harrisburg Pipe & Pipe Bending Co.
Midwest Piping & Supply Co.

Collar Leak Clamps—(See Clamps)

Compounds—Boiler—
Dearborn Chemical Co.

Compressor Cylinders (See Cylinders—Compressor)—

Compressor—Air—
Bessemer Gas Engine Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Gardner Governor Co.
Sullivan Machinery Co.
Worthington Pump & Machinery Corp.

Compressors—Ammonia—
Carbondale Machine Co.
Cooper, C. & G. Co.

Compressors—Direct Connected Motor and Gas Engine Driven
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Miller Improved Gas Engine Co.

Compressors—Direct Driven Air and Gas—
Bessemer Gas Engine Co.
Miller Improved Gas Engine Co.

Compressors—Gas—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
National Transit Pump & Machine Co.

Compressors—Portable—
Ingersoll-Rand Co.

Condenser Boxes—
Kaw Boiler Works Co.
Petroleum Iron Works Co.

Condensers—
Ross Heater & Mfg. Co.
Southwestern Engineering Co. Inc.
Southwestern Engineering Corp.

Consulting and Contracting Engineers (See Engineers)—

Controllers—Liquid Level—
Fisher Governor Co., Inc.
Newton Process Mfg. Co.
Smith Separator Co.

Controllers—Pressure—
Smith Separator Co.

Controllers—Temperature—
Brown Instrument Co.
Foxboro Co., Inc.
Tagliabue, C. J., Mfg. Co.
Taylor Instrument Co.

Conveyors—Portable Belt—
Barber-Greene Co.

Cooling Towers—Atmospheric—
Braun, C. F. & Co.

Cordage—
Bridgeport Machine Co.
Continental Supply Co.
International Supply Co.

Core Drilling—
Longyear, E. J. Co.
Mineral Exploration Co.
Spengler Core Drilling Co.

Core Drills—Diamond—
Longyear, E. J. Co.
Sullivan Machinery Co.

Coring Tools—
Reed Roller Bit Co.
Spengler Core Drilling Co.
Wilson Oil Tools Corp.

Corrugated Sheets, Black and Galvanized (See Sheets)—

Couplings—Flexible—
Nuttall, R. D. & Co.

Couplings—Plain End Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R. Mfg. Co.

Couplings—Seamless Steel—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—
Dayton Pipe Coupling Co.

Cracking Processes—
Graver Corp.
Kellogg, M. W. Co.
Universal Oil Products Co.

Crawler Treads—
Full-Crawler Co.

Crown Blocks—
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.
Slater Brothers Turnbuckle Derrick Co.

Cups—Composition—
Williamsport Development Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Borden Co.
Nye Tool & Machine Works
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
The Texas Co.

D

Dehydrating Process—
Barnickel, Wm. S. & Co.

Dephlegmators—
Newton Process Mfg. Co.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C. & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Slater Bros. Turnbuckle Derrick Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.
Slater Bros. Turnbuckle Derrick Co.

Diamond Core Drills (See Core Drills—Diamond)—

Diamonds for Core Drilling (See Carbon—Black Diamond)—

Die Heads—Automatic Screw Cutting—
Landis Machine Co.

Die Heads—Bolt Threading—
Bignall & Keeler Machine Works.
Landis Machine Co.

Die Heads — Stationary Pipe Threading—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Standard Engineering Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Machine Works.
Borden Co.
Cox & Sons Co., The
Landis Machine Co.
Nye Tool & Machine Works.
Standard Engineering Co.

Differential Pressure Recorders (See Recorders)—

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Dissolved Acetylene (See Acetylene)—

Distillate—
Acme Petroleum Co.

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co.

Draw Works—
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling and Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Burns Tool Co.
Continental Supply Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines (See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

Drilling Gate Valves (See Valves)

Drilling Machines—
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools (See Drilling and Fishing Tools)—

Drilling Valves (See Valves)—

Drills—Portable Air—
Chicago Pneumatic Tool Co.

Drills—Portable Electric—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drop-Forged Wrenches (See Wrenches)—

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Electrical Equipment—
Fairbanks-Morse & Co.
Fyle National Co.
Wico Electric Co.

Electric Apparatus (See Apparatus—Electric)—

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Pumping and Pulling Motors (See Pumping and Pulling Motors—Electric)—

Electric Steel Castings — (See Castings—Electric Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
Dunn Mfg. Co.

Enamels—
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Hope Engineering & Supply Co.
Kellogg, M. W. Co.
Power Specialty Co.
Westcott & Greis.

Engineers—Fire Protection—
Foamite-Childs Corp.
Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.
Engineers—Oil Treating—
Barnickel, Wm. S. & Co.
Engines—Crude Oil—
Western Machinery Co.
Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.
Engines—Drilling—
Ajax Iron Works.
Beaver Manufacturing Co.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Buda Co.
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Continental Supply Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Lufkin Foundry & Machine Co.
Pattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.
Engines—Gas—
Bessemer Gas Engine Co.
Bruce-MacBeth Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M. Co.
Marion Mch., Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.
Engines—Gasoline—
Buda Co.
Buffalo Gasolene Motor Co.
Climax Engineering Corp.
Continental Motors Corp.
Fairbanks-Morse & Co.
International Harvester Co. of America.
Novo Engine Co.
Waukesha Motor Co.
Western Machinery Co.
Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks Morse & Co.
Franklin Valveless Engine Co.
International Harvester Co. of America.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.
Engines—Rotary Steam—
Baker Motors, Inc.
Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.
Engines—Steam—
Ajax Iron Works.
Baker Motors, Inc.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Evaporators—
Newton Process Mfg. Co.
Expansion Pistons (See Pistons)—
Extinguishers—Fire—
Amdyco Corp.
Foamite-Childs Corp.

F

Fabricators for Gasoline Plants and Refineries—
Stearns-Roger Mfg. Co.
Fence—Chain Link—
Page Fence & Wire Products Association.
Filling Station Equipment—
Gilbert & Barker Mfg. Co.
Filters—
Metric Metal Works.
Filters—Oil—
Burt Mfg. Co.
Fire Extinguishers (See Extinguishers)—
Fishing Tools (See Drilling and Fishing Tools)—
Fish Tail Bits (See Bits)—
Fittings—Dropped Forged Steel—
Vogt, Henry, Machine Co.
Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Kelly & Jones Co.
Walworth Mfg. Co.
Fittings—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Lufkin Foundry & Machine Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Fittings—Steel—
Dayton Pipe Coupling Co.
Kelly & Jones Co.
Ohio Steel Foundry Co.
Pittsburgh Reinforced Brazing & Machine Co.
Flanges—Brass, Iron and Steel—
Kelly & Jones Co.
Metric Metal Works.
Flange Unions—
Gaso Pump & Burner Mfg. Co.
Flashlights—
National Carbon Co.
Floating Roofs and Decks—
Chicago Bridge & Iron Works
Columbian Steel Tank Co.
Floodlights—
Pyle-National Co.
Floor Circle Braces (See Braces)
Force Feed Lubricators (See Lubricators)—
Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.
Forgings—
Champion Machine & Forging Co.
Milwaukee Forge & Machine Co.
Friction Clutch Pulleys (See Pulleys)—
Fuel Oil (See Oil—Fuel)—

G

Gas and Oil Gate Valves (See Valves)—
Gas Compressors (See Compressors—Gas)—
Gas Engines (See Engines—Gas)
Gas Holders—
Chicago Bridge & Iron Works.
Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.
Gaskets—Fibre—
Durabla Mfg. Co.
Gas Masks & Safety Appliances—
Mine Safety Appliance Co.
Gas Meters (See Meters)—
Gas Oil (See Oil—Gas)—
Gasoline—
Berry's, James B. Sons Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Gasoline—Natural—
Chestnut & Smith Corp.
Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W. Co.
Newton Process Mfg. Co.
Gas Regulator Casinghead—
Davis Regulator Co.
Gas Regulators—
Chaplin Fulton Mfg. Co.
Davis Regulator Co.
Fisher Governor Co.
Metric Metal Works.
Smith Separator Co.
Gas Scrubbers—
Newton Process Mfg. Co.
Gauge Glass—High Pressure—
Durabla Mfg. Co.
Gauge Poles—
Marsh Gauge Pole Co.
Gauges—Pressure and Vacuum—
Bristol Co.
Metric Metal Works.
Gauges—Test—
Metric Metal Works.
Gear Driven Pumps (See Pumps)
Gears—Cut—
Nuttall, R. D., & Co.
Gears—Reduction—
Nuttall, R. D., & Co.
Generators—
Westinghouse Electric & Mfg. Co.
Generators—Acetylene—
Oxweld Acetylene Co.
Generators—Steam—
Baker Motors, Inc.
Generators—Turbine—
Moone Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.
Glass Bottles (See Bottles, Glass)
Glassware—Chemical for Laboratory Use—
Illinois Glass Co.
Governors—
Gardner Governor Co.
Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.
Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.
Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.
Hangers—Iron and Steel—
Dodge Mfg. Corp.
Hatches—Gauge and Thief—
Oil Conservation Engineering Co.
Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
Heat Interchanges—Fluid—
Braun, C. F. & Co.
High Pressure Gate Valves (See Valves)—
Hoists—Pneumatic, Geared and Universal—
Chicago Pneumatic Tool Co.
Yale & Towne Mfg. Co.
Hoists—Portable—
Wright Mfg. Co.
Yale & Towne Mfg. Co.
Hoists—Well Pulling—
Emsco Derrick & Equip. Co.
Hooks for Rods and Tubing—
Dunn Mfg. Co.
Hose—
Fetwick-Reddaway Mfg. Co.
Hose—Drillers—
Goodrich, B. F. Rubber Co.
United States Rubber Co.
Hose—Oil Suction and Discharge
Goodrich, B. F. Rubber Co.
United States Rubber Co.
Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.
Hot Rolled Strip Steel (See Steel)
Hydraulic Gate Valves (See Valves)—
Hydraulic Jacks (See Jacks)—
Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Insulation Materials—
Celite Products Co.
Johns-Manville, Inc.
Insurance—Fire—
Oil Insurance Association.
Insurance—Tornado—
Oil Insurance Association.
Iron Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.
Jacks—Lifting—
Templeton, Kenly & Co., Ltd.
Jacks—Pumping—
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones S. M., Co.
Kansas City Hay Press Co.
Spang & Co.
Jars—
Bridgeport Machine Co.
Spang & Co.
Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Acme Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Skelly Oil Co.

L

Lacquers—
Sherwin-Williams Co.
Lanterns—Electric—
Delta Electric Co.
Lead and Mixed Metal Products—
Eagle-Picher Lead Co.
Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.
Lead Wool and Containers—
Eagle-Picher Lead Co.
Lifting Jacks (See Jacks)—
Lighting Equipment—
Climax Engineering Co.
Pyle National Co.
Westinghouse Electric & Mfg Co.
Liquid Level Controls (See Controllers)—
Litharge—
Eagle-Picher Lead Co.
National Lead Co.
Loaders—Trucks—
Barber-Greene Co.
Long Distance Telephone—
American Telephone & Telegraph Co.
Lubricating Devices—
McCord Radiator & Mfg. Co.
Lubricating Oils (See Oils)—
Lubricators—
Ajax Iron Works.
Lunkenheimer Co.
Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.
Manifolds—
Reid, Joseph, Gas Engine Co.
Metal Buildings Sectional (All Types (See Buildings)—
Meters—Gas—
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M. Co.
Westcott and Greis.
Meters—Gasoline—
Pittsburgh Meter Co.
Meters—Oil—
Pittsburgh Meter Co.
Molded Goods—Rubber—
Goodyear Tire & Rubber Co.
Motor Controlled Apparatus (See Apparatus—Motor Control)—
Motors—Electric—
Fairbanks Morse & Co.
Westinghouse Electric & Mfg. Co.
Motors—Gasoline (See Engines—Gasoline)—
Motor Trucks (See Trucks—Motor)—

N

Naphtha—
Pure Oil Co.
Natural Gasoline (See Gasoline—Natural)—
Natural Gasoline Plant Equipment
American Tank Co.
Campbell, J. A.
Continental Supply Co.
Cooper, C. & G., Co.
Griscom-Russell Co.
Roots, P. H. & F. M., Co.
Smith Separator Co.
Westcott & Greis.
Nitrogen—
Linde Air Products Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.
Oil Burners (See Burners—Oil)—
Oil Engines, Semi-Diesel (See Engines—Semi-Diesel Oil)—
Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Boiler Works Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.
Oil Filters—(See Filters—Oil)—
Oil—Fuel—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.
Oil—Gas—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.
Oil—Lubricating—
Barnsdall Refining Co.
Berry's, James B. Sons Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pennzoil Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
The Texas Co.
Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.
Skelly Oil Co.
Oiling Devices—
Lunkenheimer Co.
Oil Meters (See Meters)—
Oil Piping Equipment (See Fittings)—
Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.
Oil Refinery Equipment (See Refinery Equipment)—
Oil Securities (See Securities)—
Oil Suction and Discharge Hose—(See Hose)—
Oil Testing Instruments—
Tagliabue, C. J., Mfg. Co.
Oil Well Cementing—
Halliburton, Erle P.
Oil Well Screens (See Screens)—
Oil Well Tools—
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.
Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.
Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.
Packing—
Crane Packing Co.
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.
Packing—Metallic—
Crane Packing Co.
Paint Guns—
Binks Spray Equipment Co.
Painting Equipment—Mechanical
Matthews, N. M., Corp.
Paints—
Alumnium Co. of America
American Asphalt Paint Co.
Continental Supply Co.
Cook Paint & Varnish Co.
Dixon, Joseph Crucible Co.
Eagle-Pincher Lead Co.
Eclipse Paint & Mfg. Co.
Sherwin-Williams Co.
Pipe—Cast Iron—
American Cast Iron Pipe Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.
Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.
Pipe—Steel—
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Son, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
Superior Tube Co.
Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co., The.
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.
Pipe Clamps (See Clamps—Pipe)
Pipe Fittings (See Fittings)—
Pipe Grips—
Larkin & Co.
Pipe Headers—
National Tube Co.
Newton Process Mfg Co.
Pipe Line Construction Tools—
National Transit Pump & Machine Co.
Pipe Line Ditchers (See Ditchers)
Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.
Pipe Screwing Machines—
Buckeye Traction Ditcher Co.
Pipe Suspension Device—
Stearns-Roger Mfg. Co.
Pipe Threading Dies (See Dies)—
Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.
Piping—Fabricated—
Kelly & Jones Co.
Midwest Piping & Supply Co.
Piping—Hard Rubber—
United States Rubber Co.
Piping—Steel & Iron—
Crane Co.
Greenspon's Jos., Sons Iron & Steel Co.
Power Piping Co.
Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.
Pistons—Expansion—
Wilson Oil Tools Corp.
Pistons—Slush Pump—
Guiberson Corp.
Plain End Pipe Couplings (See Couplings—Plain End Pipe)—
Plugs—Bottom Water—
Guiberson Corp.
Polish Rods (See Rods—Polish)—
Portable Drilling Rigs (See Rigs)
Power Pumps (See Pumps)—
Power Units—Portable (See Engines)—
Pre-Heaters—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Preservatives—Asphalt—
American Asphalt Paint Co.
Pulleys—Wood, Iron and Steel—
Dodge Mfg. Corp.
Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.
Pumpers—Long Stroke—
Farley Machine Co.
Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.
Pumping Equipment—
American Well Works.
Axelson Machine Co.
Byron Jackson Pump Mfg. Co., Inc.
Farley Machine Co.
Gould's Mfg. Co.
Jones, S. M., Co.
Myers, F. E., Bro. & Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P. Co.
Waukesha Motor Co.
Pumping Gear Units—
Nuttall, R. D., & Co.
Pumping Jacks (See Jacks)—
Pumping Powers—
Aldrich Pump Co.
Bessemer Gas Engine Co.
Buda Co.
Climax Engineering Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.
Pumps—Air Lift—
Ingersoll-Rand Co.
Pumps—Boiler Feed—
Ajax Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Oil Well Supply Co.
Worthington Pump & Machinery Corp.
Pumps—Centrifugal—
American Well Works
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Worthington Pump & Machinery Corp.
Pumps—Direct Driven—
Aldrich Pump Co.
Bessemer Gas Engine Co.
Pumps—Electric—
Prescott Co.
Pumps—Filling Station—
Gilbert & Barker Mfg. Co.
Pumps—Fuel Oil Service—
Aldrich Pump Co.
Blackmer Pump Co.
Northern Fire Apparatus Co.
Pumps—Fuel Oil Transfer—
Aldrich Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Pumps—Gear Driven—
Aldrich Pump Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

Pumps—Hot Oil—
Byron Jackson Pump Mfg. Co., Inc.
Pumps—Pipe Line—
Aldrich Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.
Pumps—Power—
Aldrich Pump Co.
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Myers, F. E. Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.
Worthington Pump & Machinery Corp.
Pumps—Refinery—
Aldrich Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Kinney Mfg. Co.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Worthington Pump & Machinery Corp.
Pumps—Rotary—
Blackmer Pump Co.
Northern Fire Appartus Co.
Roots, P. H. & F. M. Co.
Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Pumps—Slush—
Gardner Governor Co.
Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse & Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Vogt Brothers Mfg. Co.
Pumps—Suction—
Gaso Pump & Burner Mfg. Co.
Pumps—Vacuum—
Bessemer Gas Engine Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Worthington Pump & Machinery Corp.
Pumps—Water—
Aldrich Pump Co.
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Northern Fire Apparatus Co.
Prescott Co.
Purifiers—Oil Absorption—
Sharpless Specialty Co.
Pyrometers—
Brown Instrument Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.
Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Ratchet Reamers—
Nye Tool & Machine Works
Ratchet Stocks and Dies—
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.
Ratchet Wrenches (See Wrenches)
Receiving Boxes—
Reid, Joseph, Gas Engine Co.
Recorders—Differential Pressure—
Metric Metal Works
Refinery Equipment—
American Radiator Co.
Braun, C. F. & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works
Graver Corp.
Grisconi-Russell Co.
Kellogg, M. W. Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co.
Ross-Meehan Foundries.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis
Refinery Pumps (See Pumps)—
Refractories—Furnace, Stills and Baffles—
Botfield Refractories Co.
Refrigerating Machinery—
Carbondale Machine Co.
Climax Engineering Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.
Regulators—
Fisher Governor Co., Inc.
Smith Separator Co.
Rental Service—
Bridgeport Machine Co.
Reversible Clutches—
Bessemer Gas Engine Co.
Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Rigs—Drilling, All Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.
River Clamps (See Clamps)—
Rods—Polish—
Jones, S. M., Co.
Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M. Co.
Sheffield Steel Corp.
Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D. & B. Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.
Rods—Valve—
Jones, S. M., Co.
Roofing—Asbestos—
Johns-Manville, Inc.
Rope Socket Metal—
Eagle-Picher Lead Co.
Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.
Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons, Rope Co.
Wickwire-Spencer Steel Corp.
Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Rotary Disc Bits (See Bits)—
Rotary Drilling Equipment—
Climax Engineering Co.
Continental Supply Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.
Rotary Drive Bushings (See Bushings—Rotary Drive)—
Rotary Lines (See Rope—Wire)—
Rotary Post—
Reed Roller Bit Co.
Rotary Rock Bits (See Bits)—
Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.
Rotary Ventilators (See Ventilators)—
Rubber Belting (See Belting)—
Rubber Hose (See Hose)—
Run Down Tanks (See Tanks)—
Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Wickwire-Spencer Steel Corp.
Sand Pumps (See Pumps, Sand)
Screens—Oil Well—
Layne & Bowler Co.
Screens—Water Well—
Layne & Bowler Co.
Screws—Temper—
Burns Tool Co.
Seamless Steel Couplings — (See Couplings Seamless Steel)—
Separators—Centrifugal—
Miller, Max B., & Co.
Sharpless Specialty Co.
Separators—Gas and Oil—
American Tank Co.
Smith Separator Co.
Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.
Sheets—Corrugated, Black and Galvanized—
American Sheet & Tin Plate Co.
Ryerson, Jos. T., & Son., Inc.
United Alloy Steel Corp.
Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.
Sheffield Steel Corp.
United Alloy Steel Corp.
Shingles—Asbestos—
Johns-Manville, Inc.
Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Slush Pump Pistons (See Pistons)—
Slush Pumps—(See Pumps)—
Smoke Stacks—
Donovan Boiler Works
Snuffers—Fire—
Simplex Equipment Co.
Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.
Sockets—Wire Rope—
Chicago Steel Foundry Co.
Soda Ash—
Mathieson Alkali Works, Inc.
Soda—Caustic—
Mathieson Alkali Works, Inc.
Solders—Bar and Wire—
Eagle-Picher Lead Co.
Spark Plugs—
Mosler Metal Products Corp.
Spears—
Acme Fishing Tool Co.
Special Steel (See Steel Special)—
Split Sleeves (See Sleeves)—
Sprockets—Power Transmission—
Ajax Iron Works
Chain Belt Co.
Stands—Vise—
Nye Tool & Machine Works
Stationary Pipe Threading Die Heads (See Die Heads)—
Steam Pumps—(See Pumps)—
Steel—All Kinds—
Ryerson, Jos. T., & Son, Inc.
Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.
Steel—Bit—
Central Steel Co.
Steel—Hot Rolled Strip—
Central Steel Co.
Steel—Special—
Central Steel Co.
United Alloy Steel Corp.
Steel Band Wheels (See Band Wheels—Steel)—
Steel Bridges—(See Bridges)—
Steel Bull Wheels—(See Bull Wheels—Steel)—
Steel Castings (See Castings)—
Steel Couplings for Casing, Line Pipe, Drill Pipe and Tubing (See Couplings)—
Steel Crown Blocks (See Crown Blocks)—
Steel Derricks—(See Derricks)—
Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.
Steel Fittings (See Fittings)—
Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Slater Brothers Turnbuckle Derrick Co.
Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Boiler Works Co.
Petroleum Iron Works Co.
Tulsa Boiler & Machinery Co.
Vogt, Henry, Machine Co.
Steel Sheets (See Sheets, Steel)—
Steel Valves (See Valves—Steel)—
Steel Walking Beams (See Walking Beams—Steel)—
Steel Wheels and Tug Rims—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Stills—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Boiler Works Co.
Kellogg, M. W., Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.
Stocks & Dies—
Nye Tool & Machine Works
Toledo Pipe Threading Machine Co.
Structural Steel Fabricators (See Steel Fabricators)—
Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.
Sucker Rods (See Rods—Sucker)
Suction Pumps (See Pumps)—
Sulphuric Acid—
Eagle-Picher Lead Co.
Swabs—
Gulberson Corp.
Hoffman Mfg. Co.
Saunders Bros.
Simplex Equipment Co.
Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.
Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Cars (See Cars—Tanks)—
Tank Cars Leased (See Cars)—
Tank Equipment—
Oil Conservation Engineering Co.
Tanks—Bolted—
American Tank Co.
Butler Mfg. Co.
Gantz Tank Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.
Tanks—Bulk Station—
Columbian Steel Tank Co.
Graver Corp.
Tanks—Cylindrical—
Petroleum Iron Works Co.
Tanks—Elevated Steel—
Chicago Bridge & Iron Works
Tanks—Field Storage—
American Car & Foundry Co.
American Tank Co.
Donovan Boiler Works
Graver Corp.
Kaw Boiler Works
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
Tulsa Boiler & Machinery Co.
United Iron Works, Inc.
Tanks—Horizontal Storage—
Columbian Steel Tank Co.
Graver Corp.
Kaw Boiler Works Co.
Maloney Tank Mfg. Co.
Tanks—Run Down—
Donovan Boiler Works
Graver Corp.
Kaw Boiler Works Co.
Newton Process Mfg. Co.
Tanks—Truck—
American Tank Co.
Butler Mfg. Co.
Columbian Steel Tank Co.
White Co.
Tanks—Underground—
Butler Mfg. Co.
Columbian Steel Tank Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tulsa Boiler & Machinery Co.
Tanks—Welded—
American Tank Co.
Chicago Bridge & Iron Works
Gantz Tank Co.
Taper Taps—
Hughes Tool Co.
Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
Temperature Controllers (See Controllers—Temperature)—
Temper Screws (See Screws)—
Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Tagliabue, C. J., Mfg. Co.
Taylor Instrument Co.
Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.
Thread Protectors—
Spang & Co.
Tires—Automobile—
Continental Supply Co.
Tongs—
Bridgeport Machine Co.
Wilson Oil Tools Corp.
Tongs—Back Up—
Williams, J. H., & Co.
Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.
Tongs—Casing—
Dunn Mfg. Co.
Gulberson Corp.
Tongs—Chain Pipe—
Williams, J. H., & Co.
Tongs—Pipe—
National Transit Pump & Machine Co.
Tongs—Rotary—
Dunn Mfg. Co.
Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.
Tongs—Tubing—
Dunn Mfg. Co.
Tool Chests—Pipe—
Nye Tool & Machine Works
Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Tool Joint Tongs (See Tongs)—
Tools—Fishing and Drilling (See Drilling and Fishing Tools)—
Tools—Oil Well Drilling (See Drilling and Fishing Tools)—
Torches—
Oxweld Acetylene Co.
Tractor Oil (See Oil—Tractor)—
Tractors—
International Harvester Co. of America
Rock Island Plow Co.
Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.
United States Rubber Co.
Transmission Lining—
Stanley Belting Corp.
Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.
Trenchers—Vertical Boom—
Barber-Greene Co.
Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
International Harvester Co. of America
White Co.
Truck Tanks (See Tanks)—
Truck Tires (See Tires—Truck)—
Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.
Tubes—Boiler Steel—
National Tube Co.
Ryerson, Jos. T., & Son, Inc.
Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.
Tubing Elevators (See Elevators, Casing and Tubing)—
Tubular Goods—
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.
Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.
Turbine Generators (See Generators—Turbine)—
Turnbuckle Derricks (See Derricks)—

U

Underground Tanks (See Tanks)—
Underreamer Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Underreamer Cutter Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Underreamers—
Bridgeport Machine Co.
Gulberson Corp.
Wilson Oil Tools Corp.
Unions—
Continental Supply Co.
Kelly & Jones Co.

V

Vacuum Pumps (See Pumps)—
Valuations—
American Appraisal Co.
Valves—Blow-off—
Homestead Valve Mfg. Co.
Valves—Brass and Bronze—
Homestead Valve Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Mfg. Co.
Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.
Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Continental Supply Co.
Crane Co.
Darling Valve & Mfg. Co.
Kelly & Jones Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.
Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Valves—Metal Pump—
Durabla Mfg. Co.
Valves—Pump—
United States Rubber Co.
Valves—Relief—Supersensitive—
Davis Regulator Co.
Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve & Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Metric Metal Works
Pittsburgh Reinforced Brazing & Machine Co.
Powell, Wm., Co.
Reading Steel Casting Co.
Valves—Tank Vent—
Oil Conservation Engineering Co.
Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Northrup Equipment Co.
Oil Well Supply Co.
Varnishes—
Sherwin-Williams Co.
Ventilators—Rotary—
Swartwout Co.
Vises—Bench—
Nye Tool & Machine Works
Vises—Pipe—
Nye Tool & Machine Works
Vises—Post—
Nye Tool & Machine Works

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.
Walking Beams—Steel—
Moore, Lee C., & Co., Inc.
Water Gauge Cocks (See Cocks)—
Water Pumps (See Pumps)—
Water Softeners and Filters—
Graver Corp.
Water Well Screens (See Screens)
Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Weight Indicators—
Hughes Tool Co.
Welded Tanks (See Tanks)—
Welding Accessories—Electric—
Wilson Welder & Metals Co.
Welding and Cutting Apparatus—
Oxweld Acetylene Co.
Welding Machines—Electric—
Wilson Welder & Metals Co.
Welding Supplies—
Oxweld Acetylene Co.
Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Page Fence & Wire Products Association
Wilson Welder & Metals Co.
Well Drilling and Fishing Tools—(See Drilling and Fishing Tools)—
Well Drilling Equipment (See Drilling Equipment)—
Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.
Wheels—Pipe Cutter—
Nye Tool & Machine Works
Wheels—Steel Automotive—
Budd Wheel Co.
Winches—
Braden Co.
Oil Conservation Engineering Co.
Wire Lines (See Cables—Steel)—
Wire Rope (See Rope—Wire)—
Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.
Working Barrels—
Axelson Machine Co.
D. & B. Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Northrup Equipment Co.
Oil Well Supply Co.
Working Barrel Valves (See Valves—Working Barrel)—
Wrenches—Closet Spuds—
Nye Tool & Machine Works
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Williams, J. H., & Co.
Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.
Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for December

Runs

Company—	Month	Dy. Av.
*Prairie Pipe Line Co.	3,968,000	128,000
Gulf Pipe Line Co.	1,119,896	36,126
Texas Pipe Line Co.	565,606	18,245
Magnolia Petroleum Co.	1,046,077	33,744
Empire Pipe Line Co.	689,585	22,245
Cosden Pipe Line Co.	647,546	20,889
*Sinclair Pipe Line Co.	1,705,000	55,000
*Other lines	7,688,000	248,000
Total Dec.	17,429,710	562,249
Total Nov.	17,796,801	593,226
Difference	367,091	30,977

Shipments

Company—	Month	Daily Av.
†Prairie Pipe Line Co.	4,182,206	134,909
Gulf Pipe Line Co.	1,280,348	41,301
Texas Pipe Line Co.	622,002	20,065
Magnolia Petroleum Co.	1,215,405	39,271
Empire Pipe Line Co.	881,718	28,443
Cosden Pipe Line Co.	731,822	23,607
†Sinclair Pipe Line Co.	2,767,260	89,267
*Other lines	8,370,000	270,000
Total Dec.	20,050,761	646,863
Total Nov.	19,571,290	652,376
Difference	479,471	5,513

Stocks

*Prairie Oil & Gas Co.	27,390,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co.	6,572,235
The Texas Co.	4,363,549
Magnolia Petroleum Co.	5,868,902
Empire Pipe Line Co.	3,015,055
Cosden Pipe Line Co.	1,704,138
*Sinclair Crude Oil Purchasing Co.	22,400,000
Carter Oil Co.	16,038,643
*Other lines	10,000,000
Total December	99,352,522
Total Nov.	101,633,876
Difference	2,281,354

*Estimated.

†Prairie shipments also include Texas crude oil and Sinclair shipments include also Wyoming and Texas crude oil.

Note—Stocks do not include approximately 5,975,000 bbls. held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December:

	Nov. 1925	Dec. 1925
Nat. Transit	143,528.17	142,875.10
S. W. Pa. P. L.	79,602.57	81,352.71
Eureka P. L.	318,323.70	349,600.31
Buckeye P. L. (Mackb'g)	279,053.92	314,284.81
Buckeye P. L. (Cleve.)	11,352.78	11,199.41
Buckeye P. L. (Lima, etc.)	111,577.13	115,800.20
Indiana P. L.	9,162.90	8,529.02
Cum. P. L.	279,943.21	273,857.20
N. Y. Transit	16,926.71	19,369.10
Tidewater P. L.	138,009.65	143,964.94
Pure Oil Co.	167,921.44	173,742.21
Emery P. L.	47,005.83	49,321.63
Indian Ref. Co.	77,169.86	77,197.35
Paragon Dev.	28,936.17	28,798.89
Pittsburgh P. L.	7,289.93	
Total	1,708,514.04	1,797,182.81
Daily av.	59,350.47	57,973.64

Note—Indian Refining Co. also reported other receipts of 329,565.06 bbls. Paragon Refining Co. had other receipts of 102,-951.35 bbls. Paragon Development had other receipts of 3,169.25 bbls. Pure Oil had other receipts of 43,253.10 bbls. Pittsburgh Pipe Line Co. had other receipts of 648.35 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December.

	Nov. 1925	Dec. 1925
Nat Transit	372,276.27	443,017.16
S W Pa P L	314,769.58	351,978.59
Eureka P L	148,353.61	170,749.27
Buckeye P L (Mackb'g)	138,558.83	119,899.62
Buckeye P L (Cleve)	971.65	971.01
Buckeye P L (Lima, etc.)	732,107.13	817,463.26
Indiana P L	963,608.00	996,091.56
Cum P L	161,755.20	143,888.09
N Y Transit	482,743.87	531,362.75
North P L	87,808.44	122,381.61
Tidewater P L	83,545.87	182,574.09
Pure Oil Co	195,068.59	183,467.60
Emery P L	49,513.02	45,572.05
Pargon Ref	146,231.80	102,951.35
Indian Ref	399,459.91	406,210.42
Paragon Dev	30,598.39	31,017.50
Pittsburgh P L		6,434.64
Total	4,307,468.26	4,655,030.57
Daily av.	143,582.27	150,162.27

Note—Paragon Development had other deliveries of 198,000 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of November and December were as follows:

	Nov. 1925	Dec. 1925
Nat. Transit	1,018,157.25	971,135.50
S W Pa P L	724,911.17	703,426.32
Eureka P L	1,488,359.27	1,499,699.85
Buckeye P L (Mackb'g)	212,926.26	247,415.66
Buckeye P L (Cleve)	67,286.51	62,224.62
Buckeye P L (Lima, etc.)	3,637,920.88	3,358,078.13
Indiana P L	572,199.94	532,820.05
Cum P L	554,266.04	579,400.86
South P L	538,905.79	479,734.85
N Y Transit	754,325.86	756,602.76
North P L	629,014.12	481,708.84
Pure Oil Co	382,570.80	409,869.56
Emery P L	23,903.97	24,726.50
Paragon Ref	134,346.81	66,041.84
Indian Ref	273,076.94	275,004.53
Paragon Dev	5,986.04	5,999.82
Pittsburgh P L		5,555.61
Total	11,068,157.65	10,458,445.36
Decrease	18,692.66	609,712.29

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of November and December showing the gross stocks of the above fields:

	Nov. 1925	Dec. 1925
Penna	3,918,163.14	3,842,589.45
Lima	1,118,238.47	1,070,027.70
Kentucky	1,131,746.10	1,140,119.24
Mid-Cont	4,770,274.01	4,324,754.42
Illinois	79,735.93	80,954.55
Total	11,068,157.65	10,458,445.36

Daily Average Runs.

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1922	1923	1924	1925
Jan.	67,702	75,790	62,638	56,831
Feb.	75,096	71,092	68,023	60,606
Mar.	78,531	76,592	68,721	60,575
April	75,462	75,614	71,058	63,062
May	77,592	77,365	63,942	59,217
June	76,193	77,593	63,230	61,270
July	76,435	71,879	64,205	62,639
Aug.	79,387	76,910	59,942	59,686
Sept.	78,512	72,358	62,920	62,510
Oct.	77,209	76,[illegible]8	64,976	60,995
Nov.	75,313	70,762	56,282	59,350
Dec.	73,351	69,271	56,814	57,974

Daily Average Shipments.

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1922	1923	1924	1925
Jan.	119,792	171,067	145,518	157,889
Feb.	111,362	164,219	148,732	160,863
Mar.	127,753	185,487	147,098	154,591
April	127,068	170,751	147,811	151,429
May	127,840	177,102	134,997	146,995
June	137,638	173,598	143,010	149,467
July	137,872	168,330	124,187	161,338
Aug.	153,275	142,766	123,120	161,730
Sept.	158,761	137,266	127,325	156,719
Oct.	165,345	134,597	133,170	145,388
Nov.	165,677	131,426	124,400	143,582
Dec.	172,861	139,909	151,392	150,162

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1923	1924	1925
Jan.	14,040,567	12,907,202	11,353,276
Feb.	14,028,437	11,844,068	11,192,924
Mar.	13,873,146	10,906,752	11,158,297
Apr.	13,787,575	10,922,742	11,062,082
May	13,815,622	11,336,309	11,207,562
June	14,541,253	11,544,204	11,093,796
July	14,645,584	12,062,361	11,067,453
Aug.	14,770,539	12,221,676	10,974,481
Sept.	14,803,444	12,206,836	10,781,753
Oct.	14,504,111	12,664,061	11,086,850
Nov.	14,157,726	12,268,530	11,068,158
Dec.	13,444,361	11,583,680	10,458,445

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1925—	Receipts.	Shipments	Stocks.
Jan.	1,730.88	1,681.15	12,938.48
Feb.	2,702.95	4,564.70	11,076.93
March	3,177.21	2,354.30	11,899.74
April	3,040.41	1,780.11	13,159.04
May	3,814.99	5,719.90	10,254.13
June	3,052.75	1,221.83	12,085.05
July	2,639.24	3,174.10	11,550.29
Aug.	3,216.97	1,577.99	13,189.27
Sept.	2,929.99	5,352.05	10,767.21
Oct.	3,469.75	1,499.34	12,137.62
Nov.	2,759.46	3,571.32	12,283.40
Dec.	2,661.87	3,441.67	11,503.60

The Illinois Field.

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Jan. 1	3,051,219.58
Runs from wells	637,097.13
Other receipts	528,488.01
Regular deliveries	512,808.87
Other deliveries	609,160.58

The amount of Illinois oil run by the Tidewater Pipe Co. in December was 27,-989.87 bbls. and deliveries were 66,129.40 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
January	695,513.42	572,304.77
February	636,635.20	514,661.52
March	754,335.68	611,348.49
April	622,865.14	637,242.85
May	692,671.94	568,573.62
June	700,090.46	589,535.24
July	724,431.26	564,713.19
August	673,652.38	650,649.97
September	706,434.87	510,697.61
October	706,532.00	633,682.32
November	664,556.30	488,449.19
December	665,086.99	578,938.47

The Tidewater Pipe Co. Ltd., also delivered in December, 193,060.27 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 441,763.96.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per week—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
September	17,269	35,931	213,100	86,569	89,600	441,469	.....	36,869	.....	.....	36,869	478,338
October	21,455	29,806	143,388	68,643	41,321	304,612	.....	.....	.....	.....	.....	304,612
November	50,869	68,131	103,131	93,231	66,269	381,731	.....	.....	36,400	5,831	42,231	423,962
December	43,585	68,646	182,679	141,358	67,639	503,906	.....	33,873	34,097	.....	67,970	571,876

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per week—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
September	70,700	41,531	289,331	61,600	194,581	657,693	115,500	168,469	37,800	14,700	336,469	994,162
October	149,709	94,836	275,933	44,030	160,765	725,291	175,000	207,736	13,752	20,321	416,812	1,142,103
November	136,969	30,331	231,100	70,910	241,731	811,041	91,231	191,569	54,369	43,406	380,569	1,191,61*
December	89,642	143,815	249,291	105,427	189,224	777,388	91,903	177,709	48,552	38,591	356,766	1,134,154

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS (REVISED)

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
January:	Month	18,743,288	15,462,800	13,796,729	2,520,858	3,252,303	1,760,328	2,625,350	3,066,000	61,227,656
	Daily average	604,622	498,800	445,056	81,318	108,410	56,785	84,689	98,903	1,975,085
February:	Month	16,869,833	13,905,780	11,232,593	2,466,660	2,886,296	1,556,914	2,676,335	2,957,000	54,551,411
	Daily average	602,494	496,635	401,164	88,095	103,082	55,604	95,583	105,606	1,948,264
March:	Month	18,626,019	14,403,716	13,062,907	2,824,534	3,564,473	1,807,559	2,734,235	3,202,000	60,225,442
	Daily average	600,839	464,636	421,384	91,114	114,983	58,308	88,201	103,290	1,942,756
August:	Month	21,005,580	14,441,040	11,695,365	2,971,110	7,560,230	1,767,077	2,744,691	3,084,000	62,837,576
	Daily average	677,599	465,840	423,179	99,037	252,008	58,903	91,490	102,800	2,094,586
May:	Month	18,820,328	14,443,675	13,077,697	3,493,266	11,813,996	1,886,752	2,799,542	3,167,300	69,502,556
	Daily average	607,107	465,925	421,861	112,686	381,097	60,863	90,308	102,171	2,242,018
June:	Month	19,288,135	13,832,970	12,602,540	3,229,440	9,200,372	1,830,965	2,754,498	3,389,000	66,127,920
	Daily average	642,938	461,099	420,085	107,648	306,672	61,032	91,816	109,000	2,204,264
July:	Month	20,411,049	14,263,565	12,337,598	3,686,675	7,835,819	1,898,178	3,129,199	3,348,000	66,910,083
	Daily average	658,421	460,115	397,984	118,925	252,768	61,231	100,942	108,000	2,158,390
August:	Month	21,005,580	14,441,040	11,936,079	3,558,087	7,450,580	1,858,543	3,250,448	3,177,000	66,677,357
	Daily average	677,599	465,480	385,032	114,777	240,341	56,727	104,853	102,484	2,150,883
September:	Month	20,062,763	14,825,040	11,264,890	3,393,270	6,457,950	1,776,570	3,235,625	3,212,000	64,228,108
	Daily average	668,759	494,168	375,496	113,109	215,265	59,219	107,854	107,067	2,140,937
October:	Month	20,015,076	14,921,199	11,196,511	3,477,146	6,409,281	1,871,830	3,394,990	3,248,000	64,534,033
	Daily average	645,648	481,329	361,178	112,166	206,751	60,382	109,500	104,774	2,081,743
November:	Month	19,095,907	14,590,980	10,650,087	3,221,760	5,927,955	1,758,882	3,088,121	2,992,000	61,325,692
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,753	2,044,190
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,763,966	3,187,164	3,086,900	61,698,743
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,812	99,552	1,990,282
Total 12 months		230,147,342	173,270,063	144,783,451	38,151,632	78,407,138	21,537,564	35,620,198	37,929,200	759,846,578
Daily average		630,541	474,713	396,667	104,525	214,814	59,007	97,590	103,094	2,081,771

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